Video Sales Training Manual

RadioShack[SM]

You've got questions. We've got answers.[SM]

THE FOURTEEN STEPS OF *SERVING* AND *SELLING*

1. **PREPARATION!** Get yourself, your store and your products ready to meet your customers' needs!

2. **APPROACH!** Don't make customers find you! Approach them and let them know you're ready to serve! They came for a reason — make it easy!

3. **GREET!** The basics of good serving are enthusiasm, a warm smile, a genuine interest in your customers, knowledge and appreciation of your products and a determination to make the most of every customer contact!

4. **BUILD A BOND!** The **PROFESSIONAL** server is always working to reduce defensiveness and build bonds of confidence and communication with customers!

5. **UNDERSTAND** your customers' needs, interests and desires! Ask questions and really **LISTEN** to the answers! Nothing builds trust faster!

6. **PRESENT / DEMONSTRATE!** Show that you listened and are competent to help by presenting and demonstrating products that meet their stated needs!

7. **RELATE IT TO THEIR NEEDS!** Help your customers see how the products relate to the needs, interests, and desires they've mentioned!

8. **SHARE THE RADIO SHACK BENEFITS!** If you really care, you want them to have the special benefits that only we can offer.

9. **SEE IF THEY'RE READY!** Ask non-threatening questions to see if the customer is satisfied and your products have solved their problem!

10. **RESPOND TO ANY CONCERNS!** Frequently, the biggest obstacles to helping your customers are their own fears, uncertainties, and doubts! If they don't act now, they may miss the value and potential savings!

11. **HELP THE CUSTOMER DECIDE!** Customers must overcome their fears and **ACT** if they are to have the products they really want . . . today!

12. **GET SOMEONE WHO CAN HELP THEM!** If you can't help your customer, turn them over to someone who can help!

13. **EVERYTHING THEY NEED!** Don't let them forget batteries or cassettes that they will need. Recommend the security of Tandy Service Plans and convenience of **RSVP**! Show them other special values they may desire!

14. **FOLLOW UP!** Thank them and reassure them again before they leave. If appropriate, send a thank you note or call and follow up! Take an interest and continue to serve after the sale!

VIDEO SALES TRAINING MANUAL

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VIDEO

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INTRODUCTION

The Certification Program

This Certification Program is designed to certify our salesmakers as specialists in particular product categories. These salesmakers become the "Certified Product Specialists" in their store.

The Objectives

The objectives of this program are:

1. to motivate our employees to gain expertise in these product categories;

2. to recognize individual achievement; and thereby

3. to provide enhanced customer service.

By meeting these objectives, Radio Shack will be developing a sales force who knows the product category and who can take care of the customer. We will be providing our customers with an Experienced Sales Team, and we will be meeting our 8-standard Creed of Guaranteed Customer Satisfaction.

This Certification Product Guide is for the Video Product Category. All full-time staff including managers are expected to become certified in this product category.

Product Knowledge

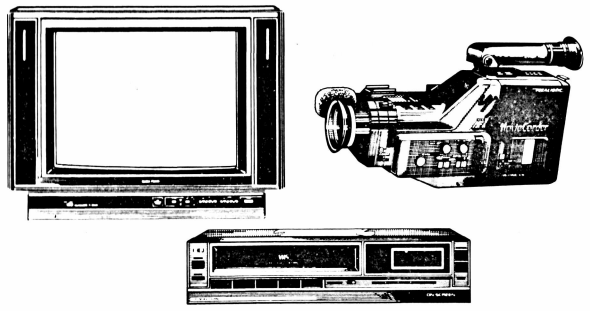
Every salesmaker will receive a manual for each category of certification. This manual will be a detailed instructional program offering the salesmaker technical and selling skill information. A comprehensive examination will be included.

The salesmaker must complete this comprehensive examination to fulfill the requirement for certification. The salesmaker must score a passing grade of 90% or higher to be certified in that particular product category.

This test will be sent to Sales Training in Fort Worth for scoring. Sales Training will notify the District Sales Manager in writing of those candidates who have passed.

If the salesmaker fails the exam, they can take this exam over again until they pass.

VIDEO PRODUCT KNOWLEDGE



Video products represent one of today's most competitive markets. We are counting on you, Radio Shack's professional salesmaker, to master the basic selling skills and specific product knowledge necessary to make Radio Shack THE place to buy video.

You have already learned the Radio Shack way to sell from our "Basic Retail Selling Skills" program. This program is designed to help you turn those basic skills into "big-ticket" video sales.

To sell video products effectively, you need to know two things: how they work and how they are used.

Information about how a product works is important during the "Presentation/ Demonstration" stage of a sale. Information about how a product is used helps you match the customers' needs with specific products and product features during the "Qualification" stage.

This manual provides both types of information. The "Video Basics" section explains terms and features that are common to VCRs, TVs and most other video products. The other sections contain specific information about these product categories.

You need to be familiar with the basic operation of every VCR, MovieCorder, TV, and Satellite product in your store. You must take the time to work with these products and to study the owner's manuals, the Radio Shack catalog, the product videotapes and industry magazines to fully understand each product and its features and customer benefits.

This manual is not intended to confuse you with technical terms and definitions. It will, however, give you an overall view and discuss important features along with customer benefits pertaining to our video line. Customers don't like to hear complicated technical explanations of the way a video product works. So everything will be explained in simple, basic terms--which is the way you should talk with your customers.

Because video products, like most of our products, change and improve all the time, the material you are about to read relates to video products in general--it's not directed specifically at current Radio Shack products. Read the current catalog and owner's manuals for up-to-date information on our current line of video products.

Video Basics

In this section, we will discuss things that are common to most video products. And, because all video products must be connected to some type of video signal, we begin the section with a discussion of the two types of video signals, Radio Frequency and Base Band.

Radio Frequency

Radio Frequency, referred to as RF, is the general name for all signals used for broadcast and cable TV. RF includes VHF antenna signals, UHF antenna signals, and cable signals. The common characteristic of all RF video signals is that the picture and sound portions of the signals travel either through the air or through the cable wire.

The process starts at the TV station or cable company. The picture and sound are loaded onto the radio frequency signal for a particular channel. This loading process is called modulation and the RF signal for a particular channel is called the carrier.

The RF carrier travels through the air or through the cable wire to your TV, where the picture and sound are unloaded. In a TV, the picture goes to the picture tube and the sound goes to the speaker. This unloading process is called de-modulation.

RF signals are used by TV stations and cable companies because they travel better over long distance.

Base Band Signals

Base band signals, the other type of video signal, are separate sound and picture signals that have not been loaded onto an RF signal. Base band sound signals are commonly called audio and base band picture signals are called video. All VCRs have input and output jacks for video and audio base band signals.

Radio Shack's combination TV/monitors also have audio/video jacks for base band signals.

Base band signals are preferred when sending signals only a short distance within your video system, because they are less subject to interference than RF signals and because loading, or "modulating," the audio and video onto an RF signal always results in a slight lowering of signal quality.

An example of how video signal knowledge can help you and your customers would be:

Customer: "All I really need is a short length of coaxial cable for copying a tape from one VCR to another."

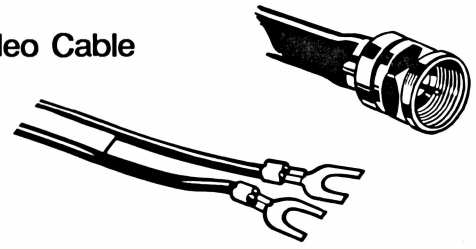
Salesmaker: "We do have that type of cable, but you'll get a better copy of the tape if you connect the separate audio and video jacks of the VCRs. Our "Video Dubbing Kit" is specially make for that purpose."

Customer: "Great, I didn't know the "Video Dubbing Kit" would do a better job."

Did you notice that the salesmaker in our example didn't use any technical terms?

It's important to know the technical terms for the signals, so that you are ready for customers who are "technical types," but don't use the technical terms unless the customer uses them first. Always match your explanations to the customer's level of understanding.

Video Cable



The different types of video signals are directly related to the different types of video cable needed to carry the signals. In a home video system, Radio Frequency signals from an antenna or cable system are carried by either coaxial cable or flat-lead.

The difference between the two is in their shape. Coaxial cable is round, and, as the name implies, flat-lead is flat. But there are other important differences.

The impedance of flat-lead is always 300 ohms. The coaxial cable used for TV signals has an impedance of 75 ohms. The impedance of the cable must match the impedance of the unit it is connected to.

Other differences between the two types of RF cable are: coaxial is less susceptible to interference than flat-lead; coaxial cable causes less signal loss in most applications than flat-lead when the signal must be sent long distances; and coaxial cable accessories, such as splitters, may sometimes cause less signal loss than flat-lead accessories.

In other words, coaxial cable is better for transmitting RF signals than flat-lead. You should point out the benefits of coaxial cable to all customers and encourage them to use it in new installations. You should also encourage your customers to replace worn-out flat-lead with coaxial cable in existing installations.

A few people will insist on using flat-lead in spite of the benefits of coaxial cable. Radio Shack will continue to carry top-quality flat-lead and 300-ohm accessories as long as the demand is sufficient. All coaxial cable is not the same. Only RG-59 and RG-6 coaxial cable should be used for video signals. Of these two types, RG-6 is preferred.

We mentioned earlier that the "impedance" of the cable must match the impedance of the unit it is connected to. All TV antennas have an impedance of 300 ohms, and some TVs have only the older type 300 ohm screw terminals for antenna connections. How can the customer use the recommended 75 ohm coaxial cable with these units?

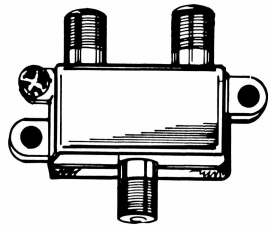
Matching Transformers

Matching Transformers are the answer. A special, mast-mounted transformer is used to make the connection to the antenna and a similar indoor/outdoor matching transformer is used to make the connection to the TV.

Another common name for the matching transformer is balun, but you should call it a matching transformer when talking to customers, because that name is more descriptive of what the unit does.

Signal Splitter

Radio Shack's Band (signal) Splitters are another type of matching transformer. In addition to matching the impedance of the cable to the impedance of the TV or VCR, they also divide the signals from an antenna into VHF and UHF signals. Some band splitters also provide a connection for FM radios.



Band splitters are necessary whenever a combination VHF/UHF antenna is used. But there is no guarantee that the splitter outputs will match the customer's components. Here is how you can overcome that problem in a sales situation.

Salesmaker: "Is the VHF antenna connection on your TV the type with two separate screws or the type with a single large screw-on connector?"

Customer: "I'm not really sure. Does it make a difference?"

Salesmaker: "Yes! It makes a great difference. This splitter is the most common type, but if it's not right, I'll be glad to exchange it for you."

Notice that the salesmaker didn't use technical terms, but rather described the difference between 300 and 75 ohm connecters with a simple description.

Did you notice that the salesmaker only asked about the type of terminals used for the VHF connection? That's because separate UHF connections are almost always 300-ohm. It is the VHF connection that may vary.

If the product has a UHF input, then screws are used, otherwise, a combined VHF/UHF coaxial connector is used.

The wide selection of matching transformers and signal splitters Radio Shack offers should allow you to suggest a single specific transformer for each connection. The use of more than one splitter or transformer for a single connection causes unnecessary weakening of the TV signal, not to mention an "eye-sore."

All the cables and accessories we have talked about so far are for RF video signals--either VHF, UHF, or cable. A different type of cable and connectors are necessary for separate video and audio signals, or base band signals.

Base band signals require shielded video cable, and the connectors are called RCA-type. The most important thing to know about these cables is that they are not the same as Audio patch cords. They are similar in appearance, but the cable inside is different.

Video Signals

Video signals use much higher frequencies than Audio signals so the cables must have more shielding. Typical

audio cables have 40% shielding, which is sufficient for Audio. But all Radio Shack video cables use 100% shielded RG-6 or RG-59 cable for minimum interference and signal loss at video signal frequencies.

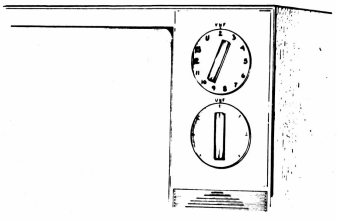
Here is a sales example:

Customer: "I want the best cables you have for the audio/video connections on my VCR. How about those gold-plated ones?"

Salesmaker: "Those particular gold-plated cables are intended for audio systems. Our specially-designed gold-plated video cables will give much better results with your VCR."

Tuners

The channel selector or tuner is another feature that is common to TVs and VCRs. A tuner's basic job is selecting channels. There are three different types of tuners. Each type offers options and features that can be important sales tools.

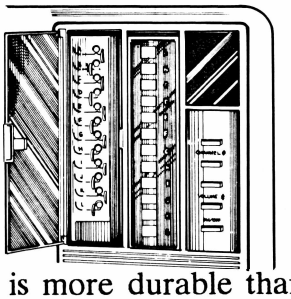


The first type of tuner is the mechanical or clicking tuner. This type of tuner offers good basic operation for low-end products. Its internal contact eventually wear out or get dirty, causing poor reception.

Mechanical tuners are not easily adapted to remote control operation and requires more service.

There are several reasons why a customer might prefer a TV with a mechanical tuner. They are often preferred when price is the determining factor or when the TV will be used on a limited basis.

The second type of tuner is the varactor tuner. A varactor tuner usually has a group of channel selection buttons. Each button has a separate pair of controls--a tuning wheel and a band selector--that is used to program the button for a particular channel.

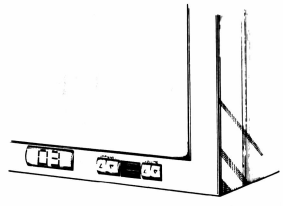


The varactor tuner is more durable than a mechanical tuner and is easy to operate once the buttons are programmed. The number of channels that can be programmed at one time is limited by the number of channel buttons the tuner has. Since 12 to 16 buttons are normal, only 12 to 16 channels can be programmed at one time.

The voltage synthesized tuner is another type of varactor tuner, but instead of using wheels to program channel buttons, up/down tuning buttons are used to select channels to store in electronic memory positions. This type of tuner offers digital

display of the selected channel and allows programming of more channels--40 or more memory positions are common.

The digital PLL or frequency synthesized tuner is the third type. These tuners provide access to 100 or more channels. Because of their PLL, or phase locked loop circuitry, and the absence of moving parts, these tuners are very dependable. Their ease and flexibility of operation have made them very popular.



Digital PLL tuners allow complete access to all channels at all times. You don't have to pick 12 or 16 channels and forget about the rest, or go through a complicated reprogramming procedure to watch something new. This is especially important in metropolitan areas that have a large number of stations or with cable systems that can offer 60 or more channels.

Digital PLL tuners are perfect for remote control. Most offer both channel scanning and direct channel access from the remote control. When scanning, up/down buttons are used to step through the channels in either direction. The tuner has a scanning memory that can be programmed to select only your favorite channels during scanning.

Direct selection allows selection of any channel, whether or not it is in the scanning memory. The remote control has a ten-key number pad, and you simply enter the channel number to go directly to the desired channel. The tuner might not always be the deciding factor in a sale. You should explain the differences to all customers, so they can decide what they need and want. For example:

Salesmaker: "Which TV can I show you today?"

Customer: (Pointing to low-end TV) "This one has a sharp picture."

Salesmaker: "Yes! All our TVs have the new high-contrast screen. Do you subscribe to our local cable system?"

Customer: "Yes. I do."

Salesmaker: (Pointing to step-up TV) "This TV has a digital tuner that gives you remote control selection of all the non-scrambled channels."

Customer: "I'm not sure if I need that. What other differences are there?"

Maybe the customer will choose the digital tuner model TV--maybe not. But she did appear interested, didn't she? The important thing is that the salesmaker introduced the step-up model without being negative about the low-end unit.

Multi-channel Television Sound (MTS)

Multi-Channel Television Sound, or MTS, is the official name for the stereo TV broadcast system, and it can be a strong selling feature. The MTS signal contains stereo information which is added to the

regular broadcast audio signal. An RF signal has the video and audio portions of the signal traveling together.

Special Audio Program (SAP)

MTS is more than just stereo. There is a third audio channel called the Special Audio Program, or SAP. It can contain audio information totally unrelated to the TV program, such as 24-hour news and weather broadcasts. It can also carry second-language audio for the TV programs. Every MTS broadcast doesn't contain a SAP signal, but the broadcaster can add it at any time. The MTS information is like a trailer added to the audio portion of the signal.

Reception of the MTS and SAP signals requires a tuner with an MTS decoder. The decoder can be included in any type of tuner, but because MTS is considered a high-end feature, it is usually only found with varactor or digital PLL tuners. Under ideal conditions, the quality of MTS stereo is similar to that of FM Stereo.

If you don't know which of your local stations are broadcasting MTS signals, call your local stations and ask. If they are not broadcasting in stereo, ask when they will start.

If local stations are not offering MTS to their customers, it is because they haven't upgraded their equipment for MTS. All stations are expected to broadcast MTS sooner or later. It will be sooner if interested local TV watchers urge them to do so.

Frequent demonstrations are the key to selling MTS. A simple demonstration of stereo TV sound, whether it's done using MTS or a stereo Hi-Fi videotape, is sure to get anyone's attention. That's the time to sell. For example:

Salesmaker: "Stereo TV sounds great doesn't it? Are you familiar with the new stereo TV broadcasts?"

Customer: "Not really. Are our local stations broadcasting stereo?"

Salesmaker: "Channel 13 is now, and Channels 4 and 8 are scheduled to start in a few months. What kind of programs do you like best?"

Customer: "Sports are my favorite."

Salesmaker: "With stereo sound, you'll feel like you're at the game. Of course, stereo sound is a great addition to other types of programs too, especially ones with lots of music. Just listen to this stereo tape."

Even if your local stations are not yet broadcasting stereo, MTS is one of the TV features of the future, and it will sell.

If you have an MTS tuner in one of your components, it can be used as an accessory in another component. You can use the MTS tuner in a VCR to receive stereo sound if your TV has only a regular tuner. There are lots of ways to sell MTS.

MTS is not the same as the "stereo" broadcast by most cable companies.

They use a different type of stereo for their premium channels. The local channels included in the cable service are broadcasting in MTS stereo, but the stereo may not be passed on by the cable company. Many cable systems will have to upgrade their equipment if they want to be MTS compatible.

This is not a serious problem for the customer. Simply connect both the antenna wire and the cable wire to the inputs of a hi-isolation A/B switch. Then, connect the A/B switch output to the TV. You would then be able to select the antenna signals when watching and listening to local MTS broadcasts, and select cable signals the rest of the time.

Cable Television

Cable TV is a major force in today's television market. Radio Shack offers many products that are directly or indirectly related to cable TV. For this reason, it is important for you to understand how cable TV works and how our products interact with cable TV systems.

There are two basic program sources for every cable TV system: satellite channels and local TV stations. At the cable company, the audio and video portions of each program source are loaded, or modulated, onto one of the cable channels.

Since cable channels are part of the general signal category called radio frequency, the cable (RF) signals carry audio and video together on the same channel.

All of the cable channels are then sent through a cable to the homes of the cable system subscribers. Sixty or more cable channel signals can travel through the same wire without interfering with each other.

Cable-compatible Tuner

At the subscribers' homes, a cable box or a cable-compatible tuner selects the channel the subscriber wants to watch. The audio and video for the selected channel are then unloaded from the cable signal and sent to the appropriate circuits in the TV or VCR.

Questions customers may ask

"How many channels can I receive?

Before we answer this question, let's review the maximum channels that are available from VHF, UHF and cable.

TV is broken down into:

VHF - channels 2 through 13
UHF - channels 14 through 69 and 70 through 83.

Channels 70 through 83 are no longer being used to receive TV programming but some tuners still count these in their totals.

Cable TV (CATV) can receive:

Channel 1
Channels 2-13 (a duplicate of the VHF channels)
Channels 14 up to 99 (some tuners can go as high as 125)

Total channels that can be received:

TV 2-13 14-69 70-83
There are a total of 82 channels available on broadcast television.

Cable 1 2-13 14 up to 125
There are a total of 125 channels available on Cable television.

When talking to your customer about the number of channels a cable-compatible tuner can receive, use the following guidelines as examples:

A 111 Cable-Compatible Tuner lets you select up to 82 VHF and UHF channels (2-83) or up to 41 different cable channels;

A 122 Cable-Compatible Tuner lets you select up to 82 VHF and UHF channels (2-83) and up to 40 cable channels; and

A 179 Cable-Compatible Tuner lets you select up to 68 VHF and UHF channels (2-69) and up to 111 cable channels.

The number of channels that your customer can receive will depend on the type of tuner they have and the channels they can receive in their area. Check with your local cable company and present the VCR that offers your customer all the channels they are capable of receiving. Meet your customer's needs by selling them a product that will receive all the channels that are broadcast in their area.

Also refer to the owner's manuals of our tuners for cable channel designation charts.

Creating a Trap

To prevent subscribers from receiving channels they are not paying for, some cable companies insert a device called a "trap" in the cable wire, just before the wire enters the subscriber's house. The trap prevents one particular channel from traveling any further in the wire. It does not affect other channels. To restrict more than one channel, additional traps are used.

Scrambling

Other cable companies use scrambling. They "mix up" a crucial part of the signal, so that a TV or VCR can't turn the signal into picture and sound. The cable box, provided by the cable company, has special circuits that re-organize the scrambled portion of the signal.

Some cable systems use cable boxes that require internal adjustments to select the channels it can unscramble.

More sophisticated cable systems, called interactive systems, send special signals through the cable wire that tell the cable box which channels to unscramble. Interactive systems usually scramble most, or all, of their channels, and they can alter or terminate a subscriber's service from their main office.

There are a few cable systems that trap some channels and scramble others.

Many cable systems don't pass along the MTS stereo signal for their channels. Since the channels used by these cable systems are not designed to carry as much information as broadcast signals, the MTS stereo information is removed when the local station's audio is loaded onto the cable channel.

Simulcast

Before MTS was introduced, some cable companies offered stereo audio with their premium channels, using a technique called simulcast. When a cable company simulcasts, it loads the regular audio and video onto the cable signal. Then the stereo audio for the program is loaded onto an FM stereo radio signal and both signals are sent through the same cable wire to the subscriber's house. At the house, the cable wire is split, with a simple passive splitter, so that the signals can be connected both to the TV or VCR and to an FM stereo receiver. The FM stereo frequency is determined by the cable company, and information about where to receive the FM signal must be obtained from the cable company.

Cable signals fall in the general category of "Radio Frequency" and are classified as VHF. VHF broadcast channels 2 through 13 and cable channels 2 through 13 are identical, for all practical purposes. The remaining cable channels are different from any other TV channels, even though they often have the same number as UHF channels. Many Radio Shack products have cable-compatible tuners, but none of our tuners allow customers to receive cable channels they are not paying for. You should never suggest that they do. Cable-compatible tuners are great with cable systems that trap-out only the channels you are not paying for. All the other channels can be received by the cable-compatible tuner if the cable wire is connected directly to the TV or VCR, without going through the cable box. This allows the customer to use the remote control channel-selection feature of the tuner when watching cable channels.

The cable-compatible tuner is still a good feature. A special connection (such as an A/B switch) uses the cable box to receive all other channels that are not being scrambled, maintaining a high level of remote channel selection.

A word of caution is necessary concerning these two uses of cable-compatible tuners. Some cities and states have recently passed laws that restrict the connection of customer-owned equipment (such as additional cable, an A/B switch or a Tuner) to the cable wire, before the wire is connected to the cable box.

Interactive cable systems that scramble most or all of their channels severely limit the effectiveness of cable-compatible tuners. The connection using an A/B switch can be used, but if more of the channels must be selected using the cable box, little is gained with the cable-compatible tuner.

Remote Control Cable Converter

Radio Shack's Remote-control Cable converter, which is actually a cable-only tuner designed as a separate unit, and our Cable TV Block Converter, which turns a standard UHF tuner into a cable-compatible tuner, can be used in similar situations. They work well with cable systems that have trapped or scrambled premium channels, but have limited use with interactive systems that scramble most, or all, of their channels.

Don't be hesitant about selling TVs or VCRs that have cable-ready tuners, even if your local cable system is the interactive type. Radio Shack products have many other features that make them excellent values.

Digital TVs and VCRs

Digital TVs or VCRs are basically the same as other TVs and VCRs. The major difference is that digital units convert the video signal into a digital signal.

The VHF, UHF, and cable TV signals, which we call radio frequency, and the separate audio and video signals, which we call base-band, are all part of a larger category of signals called analog. Analog signals can be compared to a light dimmer. The light may be turned off or on. There are also an infinite number of variations in between. Variations in an analog signal tell the receiver what to do.

Digital signals are like a group of light switches. The lights connected to these switches are either on or off. There is no in-between. Which lights are off and on determines the information being sent.

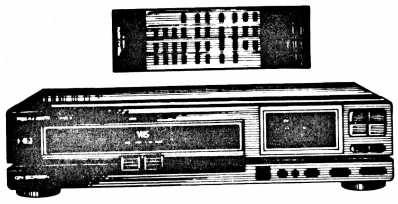
In a digital TV, the tuner receives the analog signals and separates them into video and audio signals. The audio signals are then sent directly to the audio amplifier and speaker. After separation, the video signals go through an extra component called an analog-to-digital converter.

Since digital signals are simpler and easier to handle, all sorts of things can be done once the conversion has been made. With a digital signal, a single picture can be stored in memory for a perfect freeze-frame effect; the picture sharpness can be dramatically improved; or with a special two-channel tuner, you can get a tuner-in-a-tuner that allows you to watch two channels at the same time.

TV picture tubes are not designed to use digital signals. After the digital signals are processed, they must be converted back to analog before they are sent to the picture tube.

The basic operation does not change in digital VCRs. Digital VCRs receive the same signals and record the signals in the same manner as other VCRs. There is simply a digital converter and processor included in a digital VCR that can do amazing things with the picture.

VIDEO CASSETTE RECORDERS



VCRs have changed home entertainment habits more than any other single product since the TV was introduced. It seems that there is a videotape rental store on every corner, and countless workers use VCRs to record their favorite daytime shows, so they can watch them at night or on weekends. This does not mean that everyone already has a VCR and that the market is saturated.

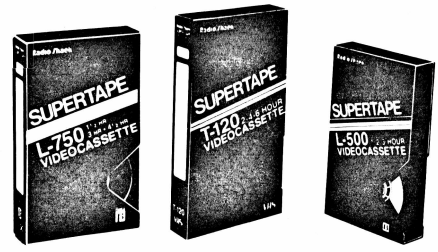
The customer market is tremendous, because people are investing in more than one VCR or "stepping up" to a new model. Radio Shack can, and should, control a significant part of the VCR market. The value of our products is second-to-none. Our product line contains everything from low-end, starter VCRs to high-end VCRs with every important feature available.

It is important to learn as much as possible about VCRs and use the information to sell the benefits to your customers.

VCR Formats

There are three VCR formats in today's home video market: 8 millimeter, Beta, and VHS. All three perform the basic functions of recording and playing video tapes. They all offer similar features.

The most obvious difference among the formats is the size of the cassettes they use.



The 8-millimeter cassettes are the smallest. They are about the same size as an audio cassette.

VHS and Beta cassettes both use half-inch width tape, but VHS cassettes are larger and hold more tape than Beta cassettes. This is one of the reasons why VHS cassettes have a maximum recording time of 8 hours, while Beta cassettes have a maximum of only 5 hours.

VCR Features and Benefits

Standard features are those features that all VCRs have in common. It is easy to take them for granted, but if you assume that everyone knows how these features work and what they are used for, you are making a big mistake. Proper understanding of these standard features have a greater effect on the everyday use of VCRs and on long-term customer satisfaction.

Watch for customers who seem confused or have questions about standard features. Then try to find out what they know and don't know and fill in the gaps.

Automatic Timer Recording

One of the most talked-about standard features is automatic timer recording.

The timer consists of a clock and some type of programmable memory that tells the VCR when to start and end recording.

Automatic timers are usually described in terms of "days" and "events." A 14-day, 4-event automatic timer can remember times for recording 4 separate programs.

All automatic timers perform the same function. They make recordings when no one is around to do it manually. The way timers operate may vary, and you should be familiar with the operation of all types in our product line.

Not all timer memories store information the same way. Some store "start-times" and "recording lengths." (For example, start recording on Monday at 12:30 pm and continue recording for 2 hours.) Other memories store "start-times" and "end-times." (Start recording on Monday at 12:30 pm and end recording on Monday at 2:30 pm.) The end result is the same, but some customers might have a preference.

Another variation in timer operation occurs in the way the timer recording channels are selected or prepared.
Some timers require the recorded channel to be set manually. If more than one timer event is set, the channel must be the same for all events or the channel must be changed manually between timer events. VCRs with clicking tuners or with mechanical-button varactor tuners usually work this way.

Other timer memories can remember a different channel for each timer event. The timer automatically changes channels at the appropriate time. This feature is only available on VCRs with digital PLL tuners or with soft-touch varactor tuners.

Some timers offer "daily" and "weekly" event recording. Basic timer recording is a "one-shot" procedure. When the selected recording time passes, the timer memory is cleared. But with a daily/weekly option, the memory settings are retained, and recording repeats at the same time the following day or on the same day/time the following week, until the settings are manually cleared or changed.

All VCRs have a switch or button that is used to put the VCR in the timer mode. Automatic timer recording will not take place unless the timer mode is selected. To prevent accidental interruption of the timer recording, manual operation is disabled when the timer mode is selected.

Quick Timer Recording

Quick Timer Recording, or QTR, is sometimes called "one button recording" or "easy timer recording."

With a basic, or immediate version of this feature, QTR recording is started manually. Then the recording stops automatically after a preselected length of time. This type of QTR is handy if you want to begin recording a program while you are at home, and then leave before the program is over.

A second version of this feature, called delayed QTR, allows setting of a delayed start-time, within a 24-hour period, in

addition to setting the recording length. For programs that start within 24 hours, this feature is quicker than setting the automatic timer.

Some VCRs have both types of QTR, others have only the immediate type. On some VCRs, the QTR times can be set only in ten-minute increments. Other VCRs allow more precise time settings.

Antenna/Cable Pass-Through

Antenna/Cable Pass-Through is a VCR feature that lets you watch one program while you record another. The antenna or cable signals connected to the VHF/UHF terminals of the VCR can go one of two places--either to the tuner, where a specific channel is selected, or directly to the VHF/UHF outputs of the VCR.

A button, usually called the TV/VCR button, controls which signal gets to the VCR output. When the button is set to the TV position, all the antenna/cable signals go directly to the VCR output and from there to the TV connected to the VCR.

When the button is set to the VCR position, only the single channel selected by the VCR tuner is sent to the VCR output. Then the connected TV can receive only that channel. This channel is received by the TV on channel 3 or 4, as determined by the CHANNEL 3-4 switch on the VCR.

Whether you are recording or not, setting the TV/VCR button to the TV position allows you to select and watch your antenna/cable signals. Most VCRs pass through the antenna/cable when the VCR is turned off, regardless of the setting of the TV/VCR switch.

What are a VCR's Standard Features?

A group of standard features all relate to movement of the videotape. They are: Play, Fast-Forward/Rewind, Visual Search, Freeze-Frame, and Record/Pause. These features are not the same as audio tape deck features. There are important differences, and you need to understand what happens inside a VCR to explain them to your customer.

When a video cassette is first loaded into a VCR, the tape remains inside the cassette. If FAST-FORWARD or REWIND is pressed, the tape moves very rapidly in the appropriate direction remaining inside the cassette. This allows the tape to travel at high speeds with a minimum of wear. (see Quick Response Tape System for alternate method.)

When PLAY is pressed, the tape is pulled out of the cassette and threaded so that it wraps around the video head drum and passes by the erase head and the audio head inside the VCR.

Visual Search

If FAST-FORWARD-SCAN or REVIEW is now pressed, the tape moves quickly in the appropriate direction, but the tape continues to stay outside the cassette and remains in contact with the video head drum. This creates the fast motion effect we call visual search. The sound is muted during visual search and the

picture contains lines of static or picture distortion called noise bars. The bars occur because the video heads are not designed to read the video signals at this increased speed. Since this feature is intended only to help locate a specific section of a tape, perfect picture quality is not really necessary.

Quick Response Tape System

A Quick Response Tape System operates differently. Quick Response cuts the amount of time between the time you press PLAY and the time the picture shows up on the TV screen. When you load a cassette tape into a quick response system VCR, the machine pulls the tape out of the cassette and moves it partly through the transport. No physical contact is made with the video drum. When you press PLAY, there is less room for the tape to travel, thus, shortening the amount of time needed for the picture to appear on the screen.

Freeze Frame

To understand freeze frame and record pause, you must also understand how the pictures are stored on the tape. The signals stored on videotapes are actually a series of individual still pictures that appear to move because they change so rapidly. This is similar to movie film, except you can't see the pictures on videotape because they are stored as electro-magnetic signals. At normal playback or recording speed, the picture changes 30 times a second.

Each of these 30 pictures is stored on the tape in two parts. The video head drum rotates at 30 times per second and usually has two heads mounted on opposite sides of the drum. The video head on one side of the drum reads one half of the picture and the head on the other side reads the other half.

When PAUSE is pressed during the playback of a tape, freeze frame occurs. The tape stops at a single picture on the tape and the video heads read that picture over and over again--30 times a second. This appears as a still picture on the TV.

Noise bars appear during freeze frame, because the video heads are designed to read the video information at the normal playback speed. The amount and severity of noise bars varies from one VCR to another.

The freeze frame picture is usually best with tapes made at the slower EP speed. On some VCRs, freeze frame is only possible with tapes made at the EP speed. The screen is blacked-out if PAUSE is pressed during playback of tapes made at the other two speeds.

Record/Pause

The Record/Pause feature is used to edit out unwanted material as a recording is made. When PAUSE is pressed during recording, the VCR backs-up the tape a little and stops. This procedure is called a simple backspace edit. When PAUSE is pressed again to resume recording, the next frame begins exactly where it should--in "sync" with the previous frame. Without this feature there would be a jerk, or "glitch," at the edit point. With

it, the edit point is usually smooth and is hardly noticed.

Counter with Memory

A Counter with Memory is another standard VCR feature. The basic counter is used to "mark" locations on the tape for later reference. To make best use of the counter, always reset it to zero at the beginning of a tape. Then, as the tape plays or records, note the counter reading at any points you might want to locate quickly, such as the beginning of a program or the beginning of an important scene in a movie.

As long as the tape is rewound to the beginning and the counter is reset to zero every time the tape is used, the counter readings for those points will be approximately the same. Counter readings may vary from one VCR to another. The counter reading at a particular point on the tape probably won't be the same on two different VCRs.

The counter-memory is very useful when you must repeatedly return to one specific point on the tape. When the tape reaches the point you want to return to, reset the counter to zero and press the button or switch that activates the counter-memory feature. Then continue recording or playback. When you are ready to return to the zero location, press STOP and then REWIND. The tape will now automatically stop when the counter returns to the zero point. You may record or playback from that point and return to zero as many times as needed.

Tracking Control

For optimum playback quality, the tape must be lined up with the video heads exactly the same way it was during recording. The Tracking Control provides the adjustment that is sometimes necessary to do this. A tracking adjustment is not usually necessary when playing back tapes that were recorded on the same VCR. Most tracking problems occur when playing a tape that was not recorded on the playback VCR. Rented tapes or a tape made by a friend are examples that might have tracking problems.

The thinner tape used in T-160 cassettes can stretch and cause tracking problems after many playings. T-160 tapes should be avoided.

Poor tracking shows up as "snow" in the picture, usually at either the top or bottom. To correct this problem, simply turn the tracking control until the picture is clear. The Tracking Control is used to obtain maximum consistency in recording and playback of your personal tapes. 8MM has an automatic tracking system, so no control is needed.

Erase Protection

The Erase Protection feature prevents accidental erasing of your tapes. When the erase protection tab is broken out of the square hole in the front of a video cassette, the VCR will not record on that tape. Some VCRs eject such tapes when recording is attempted. This feature is important on VCRs with Quick Timer

Recording or one-button manual recording that make accidental erasure more likely. All pre-recorded rental tapes have the erase tab removed. It is a good idea to remove the tab on any personal tapes that should not be recorded over.

To record on a tape that has the erase tab removed, simply cover the hole in the cassette with a piece of plastic tape. When you use 8MM tape, you slide a tab into the open square hole to prevent erasure.

Dew Sensor

The Dew Sensor is a standard feature that is seldom activated. It helps prevent one of the most serious problems that can happen to a VCR. Both the videotape and the rotating video head drum have smooth, highly-polished surfaces. If water particles, even microscopic ones, form on either surface, the two surfaces will stick together. In severe cases, the tape will wrap around the head drum like tangled fishing line in a cheap fishing reel.

If this happens, only a professional repairman can unwind the mess, and it is likely that the heads and other expensive internal components will be damaged.

A Dew Sensor detects excess moisture in a VCR and prevents the operation of the VCR until the moisture has evaporated. Some VCRs have a special indicator to tell you that the Dew Sensor is preventing normal operation. On other VCRs, the STOP indicator flashes.

Moisture problems most often occur when a VCR is brought into a warm house from a cold location. If the unit doesn't work at first, there is no reason for alarm. Simply allow it to warm to room temperature.

As an additional safeguard, VCRs have heaters inside the video head drum that are on whenever the VCR is plugged in. Once they have warmed up for an hour or two, moisture problems are not likely.

Input Select Switch

We are proud to say that Radio Shack was one of the leaders in the adoption of our final standard feature, the Input Select Switch. In the early years of VCR development, most VCRs were connected to an antenna and to a TV. The audio/video (or base band) inputs used automatic switching jacks.

When a cable was attached to the jack, the antenna signals were automatically blocked and the A/V or base-band signals had priority. The antenna signals remained blocked as long as the A/V cable was in place, even when there were no A/V signals.

This type of jack presented a problem, with the introduction of combination TV-Monitors, video processors, and two-VCR families. Most people didn't want to temporarily disconnect the processors or a second VCR every time they wanted to record from a local TV station.

The answer was to replace the automatic switching jacks with a separate Input

Select switch on the front of the VCR. This switch allows manual selection of the VCR input from either the antenna terminals or the A/V jacks.

All Radio Shack VCRs have the Input Select switch, but our high-end VCRs have a three-way switch. The three-position switch has the TUNER position for antenna signals, the A/V or EXT position for separate audio/video signals, and the SIMUL position, which allows you to receive the picture from the antenna/cable source and the sound from a separate audio source.

This is useful when cable companies send separate FM stereo signals through the cable TV wire to carry the stereo sound for their premium channels. The SIMUL position of the Input Select switch is designed for recording such broadcasts.

For this type of recording, the output of an FM stereo receiver is connected to the audio inputs of the VCR and the cable channel is selected using the VCR tuner.

Your complete understanding of these standard features is important to fill the gaps in your customer's knowledge during the sale. It is just as important AFTER the sale. Many customers are so anxious to get home and try out their new VCRs that they don't listen carefully to specifics during the sale. Often, customers will come in or call soon after the sale with some basic questions.

Here are three quick examples of things you might hear:

Example #1

Salesmaker: "Hello again. Are you enjoying your new VCR?"

Customer: "Not really!"

Salesmaker: "I'm sorry. What's the problem?"

Customer: "When I play rented movies, the picture has static all along the bottom."

Salesmaker: "That sounds like a tracking problem. (Salesmaker opens control compartment on VCR like customer's) Turn this control either right or left until the picture clears up. That should take care of the problem, but if it doesn't, be sure to give me a call."

Example #2

Customer: (Angrily) "I stop the VCR to cut out commercials while I'm recording, but when I play the tape, the picture jumps and rolls for several seconds at each place where I cut out a commercial. What's the matter with your VCRs?"

Salesmaker: "That shouldn't happen. Are you pressing PAUSE or STOP to stop the recording during the commercials?"

Customer: "STOP, of course!"

Salesmaker: "When you press STOP, the VCR has no way to line up the last picture on the tape before the commercial with the first picture after the commercial. That's what causes the jumps. If you press PAUSE instead, you'll never know the commercial was there."

Example #3

Customer: "I don't understand it. I did everything just right. The picture on the recording is perfect, but there is nothing but static for sound."

Salesmaker: "Did you watch the program as it was recording?"

Customer: "Yes, and the sound was perfect."

Salesmaker: "And what was the setting of the TV/VCR button?"

Customer: "TV, I think."

Salesmaker: "Well, because your VCR is so new, I don't think the problem is dirty or worn out recording heads. That leaves only one thing, the Input Select switch. Could it have been set to the SIMUL position, instead of the TUNER position?"

Customer: "Oh no! I did record a special simulcast from the local PBS station a few days ago. I'm sure that's it. Thank you so much for the help."

Solving problems like these is not only a good way to build good-will and customer trust, it is a good time to sell. Often the problem can best be solved with an add-on product.

Here is an example:

Customer: "I just bought my second VCR from you and I am copying some home-movie tapes that my sister sent. What can I do to make the copy as good as possible?"

Salesmaker: "First, be sure to use the best quality tape, such as our Supertape HG. Next, record the copy at the fast, SP speed. And, if you really want the best, our Video Processor is specially designed to minimize loss of quality when copying tapes."

Customer: "I'd like to see that."

That example shows what we mean when we say "knowing what the product does helps you sell the product and add-on accessories."

What are some Optional Features that are available?

About 50% of your VCR customers already own one VCR. They usually buy a second one to get features not present on their first VCR. Optional features are easy to display in your store. They are "attention getters," and can make sales opportunities for you.

Here's an example:

Salesmaker: "Are you familiar with Stereo Hi-Fi VCR sound?"

Customer: "What's that?"

Salesmaker: "It's a sound recording technique, used in some VCRs, that is comparable to the sound of compact discs. In fact, it's the only home recording system that even comes close to CD quality. Here, let me show you..."

Optional features can create interest and start a sale with many customers. Once the sale is underway, it's important that you are able to explain how and what they do.

Do you know the differences in how the stereo sound is recorded on different VCRs?

Is it recorded on the regular, linear track, or is it recorded using stereo hi-fi technology? To answer these questions, we must once again go inside the VCR.

During ordinary recording, the tape passes straight across the audio head. The audio signals are recorded in a small straight line at the bottom of the tape.

Since the video head drum is mounted at an angle, the tape crosses the video head at an angle. This angle, along with the rapid spinning of the video head drum, causes the video signals to be recorded in diagonal stripes on the larger portion of the tape which was not used by the audio recording.

This type of angled recording is called helical scan. It is not important for you to understand exactly how helical scan works. You should know that without it, huge reels of two-inch wide videotape would be necessary to record the same amount of material with the same quality as VHS home VCRs get on a single cassette containing 1/2 inch tape.

To record regular stereo, this audio track, which is already very narrow, must be split into left and right channels. These extremely narrow tracks, combined with a linear tape speed that is slower than that of a standard audio cassette player, place certain limitations on the quality of audio reproduction.

Today's advanced audio technology does wonders, considering the circumstances. The audio, whether mono or stereo, sounds fine coming out of the small internal speakers of a typical TV. When the video tape is amplified through a stereo Hi-Fi system, the limitations become obvious. Hi-Fi VCRs overcome these limitations by using the larger portion of the tape and take advantage of helical scan for audio recording and playback.

Hi-Fi VCRs

In Hi-Fi VCRs, there are two audio heads mounted on the rotating head drum, in addition to the video heads. They use a process called multiplexing to store audio information on the same (larger) part of the tape as the video.

You might think that the video and audio signals would interfere with each other. Interference does not occur because the audio signals are stored at different

frequencies than the video signals The Hi-Fi audio heads record signals at a slightly different angle than the video heads.

This technology provides home recording quality that is comparable to compact discs and surpasses any other home recording system.

Now, with all this information fresh in your mind, we are ready to talk about stereo sound as a feature.

Stereo VCR

If a VCR has stereo sound only, it is assumed that it is capable of recording and playing back stereo sound only on the linear audio track. You hear the stereo effect when the VCR is connected properly to a stereo TV or stereo system amplifier. The frequency and dynamic range are limited, and the tape noise level is high. Most stereo VCRs have Dolby or some other noise reduction system, to help reduce this noise.

Stereo Hi-Fi VCR

A VCR with Hi-Fi stereo is able to record and playback audio information using the Hi-Fi technology we just explained. You hear the stereo effect when the VCR is connected properly to a stereo TV or stereo system amplifier. The frequency response is almost perfectly flat from 20 to 20,000 Hz., and the dynamic range is equal to that of most live performances. Noise reduction is seldom needed for the audio from a Hi-Fi VCR because the signal-to-noise ratio is so good.

For explanations of frequency response, dynamic range, Dolby Noise Reduction read the Audio Sales Training Manual.

A Hi-Fi VCR also records a regular audio track, so that tapes recorded on it are compatible with non-Hi-Fi VCRs. The regular track is not always stereo.

Stereo Hi-Fi VCRs were first designed to also record regular stereo tracks. There is little need for the regular track if you have Hi-Fi, so Hi-Fi VCRs now have only mono regular tracks. The mono regular track doesn't present any problem unless you loan a tape to someone who has a regular stereo VCR. Their VCR will only play the regular track in mono. The two VCRs are compatible, but not stereo compatible.

We talked generally about MTS tuners earlier, but you also need some specific information about how MTS tuners and stereo VCRs work together.

MTS tuners can receive a main signal in stereo and a secondary signal in mono. That is a total of three channels. Our VCRs have a switch that allows for different combinations of MTS signal recording. With it, you can record both the main audio and the secondary audio, so that you can choose which one to listen to during playback.

For example, you can record the combined right and left main audio on one stereo channel and the secondary audio on the other channel. In this case, you lose the stereo effect of the main audio, but you have recorded the audio from all three channels.

A question asked by many prospective VCR buyers is, "How many heads does a VCR need?" The problem is, there is no simple answer.

VCRs have several different types of heads: an erase head, a regular audio head, the video heads, and the Hi-Fi audio heads. The video heads are the ones most people are interested in, and these are the only ones most companies advertise.

2-Head VCR

The standard number of video heads is 2. Because the individual pictures or "frames" of the video signal are recorded in two halves, each of the video heads records or plays back one half. Two video heads are capable of recording and playing back the complete video signal. VCRs that have more than two heads use the extra heads for different purposes.

Extra heads are used to improve the recording/playback quality at the slower EP speed or, the extra heads are used to improve the picture quality of special effects. Extra heads are able to do this because they are mounted at different angles in the head drum.

Azimuth Angle

If you were able to magnify and look at the signals recorded on a video tape, you would notice that the angle of the video signals on the tape is affected by the different recording speeds (EP, LP, and SP). For example, you would see that the signals recorded at the EP speed are shorter and less angled than those recorded at the SP speed. This angle is called the azimuth. On a 2-head VCR with three speeds, each change in speed should cause the angle to change, but it does not. You cannot reset the azimuth angle each time you change speeds. It is far too complicated. The 2-head VCR is optimized by setting the azimuth at a compromised angle between the EP and SP speeds.

4-Head VCR

A regular 4-head VCR is a 2-head machine with 2 more heads used for special effects. The 4-head VCR records as if it were a 2-head machine. There is no picture advantage with a regular 4-head machine. The advantage comes into play when the 4-head VCR is in playback. The other 2 heads are used for special effects like freeze-frame.

4-Head Double Azimuth VCR

A 4-head Double Azimuth VCR has 2 heads set at SP and 2 heads set at EP. When you record, the heads are optimized. A compromise is not needed. Each set of heads is set at their own azimuth. The recorded picture is a better picture; sharper and less grainy. In playback you get a better picture at SP and EP then you would get in a 2-head machine.

Set up a 4-head Double Azimuth VCR next to a 2-head VCR and demo the picture quality to your customer. Remember, a picture is worth a thousand words. This display can become a "silent salesmaker" and help you close the sale. A regular 4-head VCR is great for special

effects, but it does nothing to improve the picture quality. A 4-head Double Azimuth VCR is good for special effects and outstanding for improving the picture quality at the slowest speed, EP.

Which system is best?

Which system is best for your customers depends on how they use their VCR.

For example, a customer who does nothing but watch rented tapes and who cares nothing about special effects will probably be happy with a standard 2-head VCR. All 2-head VCRs have a good picture at the SP speed, and almost all rental tapes are SP.

If that same customer decides they want to use special effects, the special effects four-head VCR is what they need.

The customer who wants to record lots of programs off-the-air and who wants to save tape and money by using the six-hour EP speed will feel the four-head double-azimuth VCR is best.

Many customers won't fall neatly into any one of these categories. You must be ready with all the information, and you must help customers make the decision about what is most important to them.

We mentioned earlier that video heads are the ones that most companies advertise. There are a few companies that include the Hi-Fi audio heads, which are mounted in the head drum with the video heads, in their advertised number of heads. Radio Shack will not use this practice. Be sure to tell your customers to watch out for this type of advertising if they want to "shop around."

HQ

HQ is a feature developed for VHS VCRs that can dramatically improve the video quality of any VCR. However, HQ is not the same in every VCR. Let's take a look at what HQ really is and how it can vary.

There are four circuits that can be used as a part of HQ. They can be generally described as: Increased White Level Clipping; Detail Enhancement; Noise Reduction in the Color Signal; and Noise Reduction in the Brightness Signal.

In order to display the HQ logo, a VCR only has to have increased white level clipping and any one of the other three circuits. This means that there are seven possible combinations of circuits that can qualify a VCR as having HQ.

The only thing that HQ guarantees is that the picture on a particular VCR will be better than it would be without HQ. If a VCR is poorly designed and constructed to begin with, the picture can still be less than the best even though it has HQ circuitry.

You should realize that HQ is a positive feature, but it is not an absolute quality guarantee. Radio Shack VCRs are excellent values and had good picture quality before HQ. The picture quality and the product value are even better with HQ.

Let's talk about the specific circuits, just in case you get a technically curious customer.

Increased white level clipping is made possible because of the overall improvement in VCRs and in videotape. When a signal is recorded, the VCR clips off the top of the brightness signal at a point where noise and distortion usually occur. However, because of better tape and VCRs, the point where noise and distortion occur is higher, and the white level clipping point can be increased. The effect of this is sharper edges in the picture, especially around letters.

Detail enhancement is simply another circuit that helps sharpen fine lines and the edges of objects.

The other two circuits are noise reduction circuits. We are not talking about the kind of noise you hear. This is noise you see in the form of graininess in the picture.

One of the noise reduction circuits takes video noise out of the brightness (intensity) part of the signal. Technicians call this brightness part of the signal "luminance."

The other noise reduction circuit removes noise from the color part of the signal. This color part of the signal is called "chrominance" by technicians.

HQ tapes are 100 percent compatible with non-HQ VCRs, so there is no need for an on-off switch. The feature is always on.

On Screen Display

On-screen display (OSD) is another optional feature for our VCRs. These VCRs have special microprocessors that generate letters and numbers. With these units, things such as clock time, automatic timer settings functions, and the channel setting can be displayed on the TV screen, and you can program the timer using the remote control.

On some VCRs, the TV screen is the only place timer information is displayed. On others, the information is also shown on a standard digital display on the VCR. This lets you program the VCR without turning on the TV, if desired.

Don't let the simplicity of this feature fool you. Programming the timer has been the most confusing part of VCR operation. On-screen display makes timer programming "user friendly". All you have to do is demonstrate it to your customers. Every VCR has different OSD programming instructions. Become thoroughly familiar with each VCR in our product line so you can demonstrate this feature to your customers.

Tuner Memory Programming

Tuner Memory Programming automatically stores all the active channels in your television viewing area into memory. With the touch of one button you can access these stored channels.

Index Search/Scan

With this optional feature, your VCR

automatically marks the tape with an index signal when you start a recording. You can quickly locate a specific recording on the tape by using index scan or index search.

The index scan feature plays back the first five seconds of a recording so that you can see if it is the recording you want to watch.

The index search feature advances or rewinds a tape directly to the beginning of a desired recording by locating the recording's index search signal. It there are several recordings on a tape, index search skips the undesired recordings to locate the desired recording.

Blank Search System

The Blank Search System on some VCRs lets you locate the end of a recorded section of a partially recorded tape. The remote control is used to locate the end of the recorded section. If there are no black sections on the tape, after searching to the end of the tape, the VCR rewinds the tape to the beginning. Then, the VCR stops.

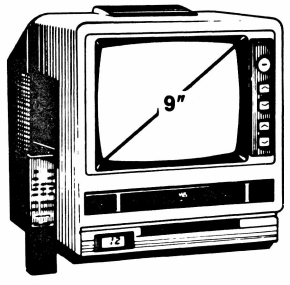
Auto Head Cleaner

Some VCRs even have a head cleaner that is part of the VCR operation. The head is automatically cleaned everytime the tape is loaded into the VCR machine.

TV/VCP Combo Player

This machine combines a TV and a video cassette player in a single portable system. It's the compact combo you can enjoy almost anywhere. It's easy to carry from room-to-room and perfectly sized for a college dorm, sales presentation, or travel. It's great for entertaining passengers during trips. The included DC cord lets you power it from the lighter socket of a vehicle or boat. No more bored children who bother the driver every minute asking, "Are we there yet?"

Sell the advantages of this combo unit to your customers along with these added features: remote control; automatic videotape play, rewind, stop, and eject; 111-channel TV tuner with memory presets; and even an earphone jack, so you won't disturb the driver.



VIDEO DISC PLAYER

Compact disc quality in a video player. This combined machine offers razor-sharp, color-rich, high-density pictures that only a laser can deliver, plus sensational digital sound. Broadcast-quality clarity and low video noise yield a stunning high-contrast picture unmatched by any other format.

It is important that you be able to recognize the different types of discs that can be played in the MultiDisc Player. If you are knowledgeable, then you can answer your customer's questions.

You can play 3" CDs, 5" CDs, 5" CDVs, and 8 or 12-inch CD Video LDs. Read the owner's manual for complete label information.

There are some types of video discs that cannot be played on the Multi Disc player. Again, read the owner's manual for more information.

Video Disc Formats

Video laser discs come in two formats--standard and extended play. The standard format uses a recording method called constant angular velocity, or CAV. With this disc, you can use features that let you vary the speed and direction of play with flawless video quality. CAV discs also offer flawless still frames.

Extended play discs use a recording method called constant linear velocity, or CLV. This format can store up to 60 minutes of video and audio on one side of a 12-inch disc. You can't use the still-frame and multi-speed features with CLV discs, but the extended playing time lets most movies fit on only one or two discs.

With either video laser disc format you can use any of these standard features: pause, memory stop, forward and reverse search, ASMS, intro scan, and time or frame search.

Additional features include:

Memory Stop

Memory Stop remembers the position where you last stopped a Laser Disc, and plays from that position the next time you start the Laser Disc, even if you turn off the MultiDisc Player.

Repeat Modes

Four Repeat Modes let you automatically repeat a specified section of a disc, the chapter of track currently playing, a series of chapters or tracks you program, or an entire side of a disc.

Track/Chapter Random Programming

This feature lets you program up to 20 chapters or tracks to play in any order you choose.

Automatic Random Play

The Automatic Random Play feature plays all the tracks of an audio disc in a

random sequence.

CD Edit

CD Edit automatically selects the tracks on a CD that will fit on a specified length of audio tape. This is great for making copies of your CDs onto cassettes.

Automatic Disc Protection

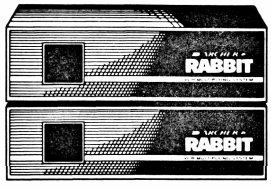
In conventional disc players, discs tend to warp if they are left in the disc compartment. This feature protects the disc while it is in the disc tray, even if you turn off the MultiDisc Player.

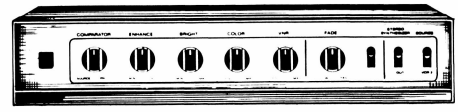
On Screen Display

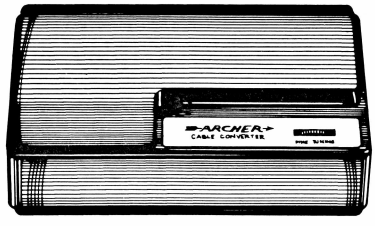
OSD displays disc-play and programming information on your TV's screen. You can display the current chapter/track number and elapsed time from the beginning of the disc; the remaining time to the end of the disc; the total time on the disc; the elapsed time from the beginning of a track; and the remaining time to the end of the track.

Become knowledgeable about these products by reading the owner's manual and studying the catalog. Play with the products until you feel comfortable presenting and demonstrating them to your customers.

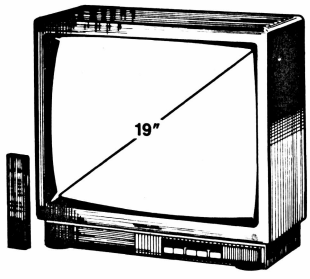
Remember to sell add-ons. Customers will always need video tape and batteries for their remote control. But how about selling your video customer a Video Processor, a Cable Channel TV Block Converter, a Video Distribution System, or a Rabbit VCR Multiplying System. Get to know these products and how they enhance your video products. Offer them to your customer.







TELEVISION



For many years, a television was a television was a television was a television. There was only one type of tuner and one type of picture tube. The only thing you had to decide was what size you wanted.

Back then, a TV was connected to an outdoor antenna or a pair of "rabbit ears" and you watched the programs that were available from local stations.

As with everything else in video electronics, the TV has gone through many rapid changes in the past few years.

This section contains a description of the different types of TVs, a quick review of standard TV features, and a detailed discussion on the optional features.

For our purposes, we will divide TVs into four categories: TV Receivers, TV Monitors, combination Receiver/Monitors, and Projections TVs.

TV Receiver

TV Receiver is the name for any TV that has a tuner capable of selecting VHF and/or UHF channels. The name receiver comes from the fact that it can receive radio-frequency broadcast signals, and turn them into pictures and sound. Remember VHF, UHF, and Cable TV signals are all part of the larger signal group called radio frequency. A TV receiver is what all home TVs were for many years and its what most people think of a as "a plain TV set."

Monitor

A Monitor often looks about the same as a TV receiver, but it has no internal tuner. It cannot directly receive radio frequency signals. It only has inputs for separate audio and video (base band) signals. Some monitors are video only monitors and do not have an audio input. These signals are available from separate, external tuners, VCRs, satellite receivers, and other video components.

Until recently, monitors were only available to, and used by, professional TV studios. The recent video boom has seen the introduction of many video components and accessories that use the separate A/V signals that previously were only found in the studios.

To use these new components, people needed a TV that could take in separate audio/video signals and still be able to receive antenna or cable signals. This need resulted in the combination TV Receiver/Monitor. All of the units that Radio Shack sells as TV monitors are actually this type of combination, with antenna/cable inputs and separate AV inputs.

LCD TVs

LCD TVs are different from other TVs mainly because of the type of screen they

have. Most TVs use a picture tube that is technically called a cathode ray tube or CRT. In this type of picture tube, an electronic beam controlled by electro-magnets draws the picture on the front surface of the tube 30 times every second.

The picture tube in an LCD isn't a tube at all. It is a Liquid Crystal Display, much like the ones used in some digital watches and clocks. The display is made up of thousands of tiny dots, called pixels. The video signal is first converted to digital information by the TV. Then, a microprocessor tells each pixel whether it should be black, white, or somewhere in between for each frame of the video signal. It does this several times a second.

LCD TV screen offer some specific advantages in small-screen TVs. The LCD screen is a flat, wafer-like unit, which makes it possible for LCD TVs to be more compact than small TVs with a standard picture tube.

The screen is designed so that existing light sources, the sun or normal room lights can be used to light the picture. This means the TVs use less power.

There are a couple of minor disadvan-with LCD TVs. First, the screen must have some type of light source. This can be sunlight or external that has to be used to watch the TV in low light or darkness. This, of course, uses more power.

Second, the picture scan rate may be less than the normal 30 times per second. This can cause a slight smearing of the picture in fast action scenes. LCD technology is improving rapidly and this problem is sure to be solved soon.

At this time, all LCD TVs are small, and therefore, portable, with features about the same as for any small portable TV. Most LCD TVs can also be classified as TV receivers, because they have built-in tuners that allow channel selection.

Someday, there might be large, flat LCD monitors that hang on the wall like large paintings. The tuner could be hidden away somewhere and operated by remote control.

Projection TVs

Projection TVs are the large-screen units you often see in commercial establishments. The diagonal measure-ment of their screens is typically 40 inches or more. With projection TVs, the screen itself is not producing the picture. The picture is projected onto a blank screen similar to those used for movie films.

Some models project the picture from the front and others use a translucent screen and project the picture from the back. Whether it is a front or rear projection system, there are two popular methods used to project the picture. In one, the picture of a smaller TV set is projected onto the screen. In the other, a three-lens color projector is used to project the picture.

A projection TV can be either a TV receiver with an internal tuner, a TV

monitor that only accepts AV inputs, or a combination unit.

Because of the extremely limited market for this type of TV, Radio Shack does not plan to enter the market. You should know a little about them so you can talk more intelligently to customers about their operation.

High-Definition Television

High-definition television is going to revolutionize the television viewing experience in the coming years. High-definition television or HDTV will provide better picture and sound quality making television all the more interesting and stimulating to watch. Additional scan lines will be displayed at once on the television screen, making the picture clearer and more vivid.

At this point HDTV isn't officially available, since standards are still being debated, but high-resolution systems are here. They are being used in the medical profession where improved picture quality is a critical concern in showing the minute details involved in delicate procedures.

What are the Standard TV Features?

You might be surprised at how little most people know about the everyday operation of a TV. For example:

What is the difference between tint and hue, contrast and brightness, and why don't all TVs have fine-tuning controls and horizontal/vertical-hold controls?

Do you know the answers to these questions? Do your customers?

The following information about standard features answers these questions and more.

We have mentioned the 3 types of tuners, but we didn't mention fine-tuning or why it is sometimes necessary. Because TV stations use sophisticated equipment to make sure their transmitting frequencies remain constant, fine-tuning problems are seldom caused by the stations. The problem is usually related to the TV's tuner. Some tuners use temperature-sensitive components that allow reception to vary with temperature. A fine-tuning control within those tuners allows manual adjustment for such variations.

Automatic Fine Tuning

Most tuners now contain a circuit called AFT, which stands for automatic fine-tuning. This circuit automatically adjusts the tuner, as long as the tuner is reasonable close to the right frequency. In most cases, AFT eliminates the need for a fine-tuning control.

Digital PLL tuners use crystal-controlled circuits, similar to those used by TV stations, to maintain the accuracy of the tuner. A fine-tuning control is never needed for this type of tuner.

Because all cable channels are not the same, cable-compatible digital tuners usually have a switch that allows the tuner to receive the different variations of cable channels.

Brightness/Contrast

Most TVs have a brightness control and some also have a contrast control. Often people think these controls do the same thing, but they don't.

The brightness control makes the entire picture either darker or lighter. The contrast control increases or decreases the difference in brightness between the dark and the light areas of the picture.

Vertical and Horizontal Hold

Vertical- and Horizontal-Hold controls correct the picture problems known as "vertical roll" and "horizontal tear." These controls are similar to fine-tuning because better TVs have circuits that make these adjustments automatically.

Color/Tint

There are two additional controls included on most color TVs. One of these is usually called color but might also be called intensity. The other might be called tint or hue.

All of the colors in a TV picture are make from different combinations of three basic colors: red, green and blue. The Color Control adjusts the overall amount of color in the picture by increasing or decreasing all three colors equally. The Tint Control adjusts the balance among the three colors so that they are mixed in the proper amounts to reproduce the picture accurately. Some TVs have automatic adjustment of color and tint, but manual controls are also needed to allow for personal taste.

Antenna Connections

All TV Receivers must be able to receive VHF channels 2 through 13 and UHF channels 14 through 69. Most TVs still receive UHF channels up to 83, but the FCC requirement has recently been lowered to 69, because no more TV stations will be licensed for channels above 69.

Most TVs have separate UHF and VHF antenna terminals. The UHF terminals are always 300 ohm and the VHF terminals might be 300 or 75 ohm. Most people use combination antennas and have to use a special splitter to connect the signals to the separate TV terminals.

The reason for the separate terminals goes back many years. Early TVs only received VHF. Then, when UHF channels were added, the manufacturers simply added a separate UHF tuner inside the TV. This separate UHF tuner had separate input terminals. Today, most TVs use a combined UHF and VHF tuner. The separate antenna terminals remain only because people are used to them. Often, the two separate inputs are actually combined inside these TVs before they go to the tuners.

Customer problems are usually sales opportunities in disguise. Here's an example:

Customer: "When I change channels, it takes a second or two for the picture to come in clearly on the new channel. Am I doing something wrong?"

Salesmaker: "I don't think so. It sounds

like the automatic fine-tuning is having to search for the channel. If your TV has a fine-tuning control, you can adjust it to minimize, or eliminate the search time."

Customer: "It doesn't have one. I've had this TV several years and it has never really worked like I think it should."

Salesmaker: "TVs with digital tuners should never have that problem. Here, let me show you.

What are the Optional TV Features?

Cable-compatible tuners, MTS decoders, and digital processing have already been discussed. There are other important features that you should know about.

Sharpness

Controls called sharpness or picture are often included in high-end TVs or combination receiver/monitors. The Sharpness Control is actually a detail enhancer similar to the ones used in separate video processors. The Picture Control is a sophisticated contrast control.

Comb Filters

Most high-end TVs and receiver/monitors have circuits called comb filters that remove video noise from the signal, and therefore make the picture sharper. These circuits have no external control, are always on and do make a positive difference in the picture quality. The customer might be unaware of them, unless you make them aware of this feature.

High Resolution

A high resolution picture tube is a very important optional feature, but many people don't understand exactly what it is. Picture resolution is measured in the number of lines that are used to make the picture. There are vertical lines, which are the number of lines from top to bottom, and horizontal lines, which are the number of lines from side to side.

All TV signals broadcast in the United States have 525 lines of vertical resolution. This is the national standard and cannot be changed. Although there are some TVs, called high-definition that process the signal and artificially create more lines, the number of actual vertical lines is always 525.

The number of horizontal lines is controlled by the TV. 250 lines is about average, and any number greater than about 300 is considered to be high resolution and is advertised as such. The number can be much higher.

The greater the number of horizontal lines, the sharper the picture. This is important for larger screen TVs or for TVs that are used as computer monitors. If you use a word processor to display more than 40 letters per line on a screen that is not high-resolution, it is very hard, if not impossible, to read. Specialized computer monitors are best for sophisticated word processing programs.

A high-contrast screen uses a dark or tinted CRT to improve picture contrast, particularly in a brightly lit room.

Displays of sets with high-contrast screens in stores with outside windows (where normal screens often look "washed out" due to high light levels), will be particularly effective.

Square Picture Tube

The square picture tube is a feature that is advertised to improve picture quality. It does in laboratory measurements, but the visible benefits can be questioned.

Until recently, all picture tubes have been slightly rounded at the corners. This results in a small amount of picture distortion at the corners. Although a decrease in this distortion is a measurable improvement, it's questionable whether the customer will get enough visible benefit to justify the added cost. Radio Shack builds products for real customer value, not advertising advantage.

When the corners are squared, the diagonal measure increases. So, a square tube set comparable to a 19" Radio Shack set is measured as a 20" set. Although the diagonal measurement is larger, the increase in overall picture area is negligible in terms of real customer value.

Multiple RF Inputs

Multiple RF inputs is a nice feature if you have cable TV and want to receive a local stereo broadcast. Remember, the local stereo signals are often not passed on by the cable company to the subscriber, and with ordinary units, an A/B switch would be required. With this feature, you can permanently connect both the antenna wire and the cable wire to the TV and then, by remote control, you can choose the signal source you want.

Combination receiver/monitors might also have multiple audio/video inputs for connection of more than one VCR or other components that use audio/video signals.

Tuner Band Switch

A Tuner Band Switch lets you set the tuner to receive regular VHF/UHF channels or cable TV channels.

Cable System Selector

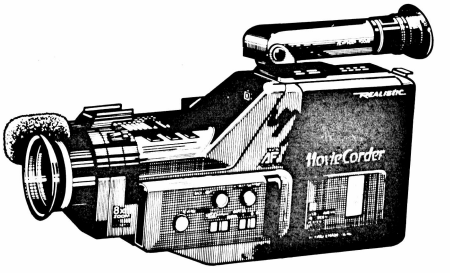
A Cable System Selector lets you set the tuner to receive one of three types of cable system channels, either STD, HRC or IRC.

Built-in Stereo Speakers

Built-in Stereo Speakers provide full stereo sound from stereo broadcasts or stereo audio/video sources.

Some of these features are easy to demonstrate to customers. Other features are difficult to demonstrate, but can be easily explained to your customers. In either case, the final reason that a customer picked our TV over someone else's might be the fact that you knew what you were talking about, that you took care of the customer by answering their questions, and that you took the time to tell the customer what these special features can mean to them in customer benefits.

MOVIECORDER



This section will give salesmakers a basic understanding of the features and operation of the MovieCorders (Camcorders) offered at Radio Shack. You should also study the Radio Shack catalog and the owner's manual that comes with each MovieCorder product. Once you understand this material, the catalog, and the MovieCorder products; it should be easy to satisfy your customer's needs, and make sales.

Camcorder Development

Home movie-making began with the camera. This was a process that only offered you a moving picture without sound. You had to get the film developed and set up the screen; get the projector out; and in general, spend 30 minutes threading and setting up the projector. This was cumbersome and time consuming.

This evolved into the video camera which was simpler and easier to use. You hung a portable VCR over your shoulder and aimed a separate camera at your subject. This offered the customer audio as well as video pictures. The VCR may have weighed nearly 9 pounds, and the camera was large and heavy.

This led to the introduction of the Camcorder which combined the function of two products, the VCR and the Camera, into one unit. Camcorder sales have skyrocketed. It isn't the professionals who are buying camcorders, but the average person who wants to preserve their memories of weddings, graduations, birthdays, family events and gatherings, or record images of valuables for insurance companies.

Camcorder Formats

Camcorders come in three formats; VHS, VHS-C, and 8mm.

The most popular format is VHS. With VHS, you can shoot home video movies and take the tape out and play it in any VHS deck or play it back through the camcorder.

The VHS cassette is clearly the consumers' favorite. The newer VHS camcorders have more features and are smaller and lighter than those of just a few years ago.

A variation call VHS-C is a compact version of the VHS full-size format. It is compatible with VHS tape width but comes packaged in a smaller, more compact cassette. This smaller VHS-C tape can be played back on a VHS home deck with the help of an adapter.

The final format that camcorders can come in is 8 millimeter. 8mm was developed by Sony to compete with the more popular VHS format.

Of the 3 formats, VHS is the most popular, 8mm next, then VHS-C. Radio Shack is offering the VHS and the 8mm formats to our customers.

Radio Shack full-size VHS MovieCorder is a full-featured camcorder that offers automatic and manual operation. Its design provides the customer with both a second VCR and a high-tech camera. It compares to a 35mm SLR camera that semi-professionals use to take still photographs.

The advantage of the 8mm tape format is its size. It allows the design of the MovieCorder to be considerably more compact and lightweight. The 8mm MovieCorder weighs less than 2.5 pounds. The size and weight make it ideal to take along when traveling, hiking or attending sporting events.

In spite of the small size, the 8mm MovieCorder will record up to two hours on one cassette. The cassette is about the same size as a standard audio cassette.

The MovieCorders in our line are easy to use. All you need to do is pick up the camera, turn on the power, press the record button, and just point and shoot. It's that easy for yourself and your customer. Ensure that you know the features and customer benefits of each MovieCorder. Review the owner's manuals, read the catalog and play with the MovieCorders. Be able to fully demonstrate how the MovieCorder operates, what each feature does, and how the MovieCorder will be an asset to their home life.

Features and Benefits

Our MovieCorders are fully automatic, so you have nothing to set, turn or adjust. You just point the camera at your subject matter and shoot.

This should make it easy for you to sell these products to your customers. Stress the ease in handling, the simplicity of operation and the fun involved with producing your own movies. It's important to make your customer's first impression of the camera one of simplicity and convenience. Basic operation is simple and automatic.

The Benefits of Owning a MovieCorder

Let's look at the many benefits of owning a MovieCorder. You should make your customers aware that they will be recording the sights and sounds of family events. They will be preserving a slice of family history which can be seen anytime the customer wishes. Stress that they have captured their family in a moving, talking environment, instead of the frozen world of still photography.

Paint a word picture for your customer of the fun they will have recording birthdays, anniversaries, vacations, sporting events, and family gatherings with their MovieCorder, and the gratification and pleasure that they will have of seeing these events played out time and again, whenever they wish, in full color with live action sound.

The MovieCorder offers the customer the capability of immediate playback of these recorded events instead of having to take

the film in for processing and waiting for photo development. Imagine taping your child's birthday party and the fun your family will have in watching the happy occasion, even before the party is over.

Your customers can use our MovieCorder to tape their athletic form during a tennis or golf game and be able to playback the event to analyze their swing, movement, and general performance. Imagine the advantages your customers will have in studying how they execute the necessary moves to excel at a particular sport.

Emphasize to your customers how light the cameras are. They are easy to carry and handle. And your customers will not have to pay for film development, thus saving money, time and effort.

Camcorders are fun to use and offer your customer advantages and benefits they would not want to pass up once you've explained how MovieCorders can enhance their life. But many of them feel they just can't afford it, or won't know how to work it. That's where you and RSVP come into play.

Your customers can enjoy the excitement of owning any of our MovieCorders on the RSVP plan. Bring up the monthly payments early in the sale. RSVP can help soften any price objection the customer might come up with.

As far as ease of use, the key here is to be prepared. Have a pro-grade videotape and charged battery available at all times, so you're always ready to give a demonstration.

You should not demonstrate the product. Get the MovieCorder in the customer's hands. Then you can point out where the main controls are. Let that customer make a test recording and find out just how easy the MovieCorder really is to operate.

Watch the tape back on one of the large monitors in the video area. Why there? The more people that see the tape, the better.

Someone else in the store or walking past in your mall may also be interested in having a MovieCorder. What better way to sell them on the idea than to let them see the exceptional video quality from the MovieCorder, and just how fun and easy it is to use.

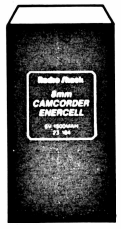
Make sure that you become comfortable with the MovieCorders, study this manual, read the owner's manuals, and play with the cameras. They truly are easy to use; just point and shoot.

Power Sources

Before you can show the exciting features of your current models, you have to be able to turn the power on.

MovieCorders have a three-way power supply that lets you power the cameras with the battery pack, the AC adapter/

charger or an optional DC power cord connected to a 12 volt source like your car's cigarette lighter.



The supplied battery pack comes discharged. You must use one of the other power sources to make your first recording, or you have to wait about one hour for the battery to charge. Many older camcorder batteries required as much as 8 hours to fully charge. Make sure you inform your customers that it only takes 1 hour to fully charge our battery. Stress the positive value of quick one hour charging.

The one-hour battery pack will operate the MovieCorder an average of 28 minutes. The extended battery pack will operate the MovieCorder an average of 48 minutes.

The full-size VHS units come with lead-acid batteries. The benefit to your customer is that extra and replacement batteries cost much less than nickel-cadmium batteries. But you need to let your customers know that you don't treat lead-acid batteries the way you did nickel-cadmiums.

A lead-acid battery is just like the battery in your car. It must always have a charge on it, or it'll lose its ability to recharge. It's best to always keep these batteries fully charged, especially when they'll be stored for a period of time.

Lead-acid batteries don't have a memory, they can be used for 10 or 15 minutes, then put on the charger, used again for 5 or 6 minutes, put back on the charger, over and over again, without affecting the ability of the battery to hold a charge.

The only precaution your customers need to take is to be sure that they never let the battery completely drain. If that happens, it's time to buy a new battery.

MovieCorder-VCR Features

Now that we have power, let's begin by looking at the VCR features on the MovieCorder. The next several sections of this manual will be much easier to understand if you have a MovieCorder at hand while reading them.

Starting at the top of the camera, you will notice all the controls for the VCR. These controls are the same as in any VCR we carry. There is a Power On Switch which turns the power on so you can operate the camera, a Mode Selector so you can choose to play a recording or to record, and the Eject button which allows you to open the cassette compartment to load or unload a tape. The remaining buttons are Rewind, Play, Fast Forward, Fast Scan Forward, Fast Scan Review, Stop, and Pause. Their functions are exactly the same as in any standard VCR we sell.

The VCR part of the MovieCorder has the same features as other VCRs that we sell at Radio Shack. It has a Visual Search Feature that lets you view a tape at a fast speed in the forward or reverse

directions. It offers Fast-Forward and Rewind, Freeze-Frame, Tracking Adjustment, and Dew Protection features. You should be familiar with these features based on your knowledge of our VCR line.

MovieCorder-Camera Features

Let's discuss the camera features on the MovieCorder. In the front of the camera is the Lens Cap which protects the camera's lens. A Lens is a piece of glass or plastic which focuses light. The lenses we use in our MovieCorders are made of optical-grade plastic. Using this material keeps down camera weight. The Lens Cap snaps off and snaps into place on the hand strap while shooting. Please remember to leave the Lens Cap on when you are not using the camera. This protects the lens from damage. If needed, your customers can purchase a 46mm optional lens and filter accessories for even better professional recordings.

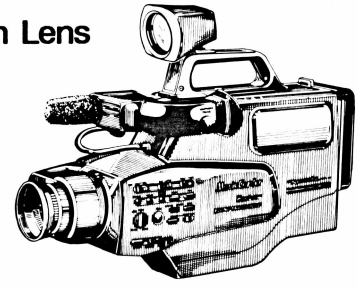
CCD Imaging Device

Our MovieCorders are equipped with a solid state Imaging Device. An imager is a pickup device which converts light from the lens into electrical signals. The imager replaces the older newvicon and saticon electronic pickup tubes. They represent the most current solid state Image technology and help make our camcorders smaller and lighter. The CCD and MOS pick-up eliminates the lag or burn-in caused by photographing a bright object or light.

All of our units use the same one-half inch CCD imager. CCD stands for Charged Coupled Device. It's a computer chip used in video cameras to sense images. The CCD is less prone to burn-in, lag, and streaking than older tube pickups. CCD images use very little power.

A common question from many customers is the number of pixels or resolution each camcorder pickup has. All of our MovieCorders have 270,000 pixels on the CCD imager. This creates a clear, high resolution picture, even in low-light conditions.

Power Zoom Lens



The Power Zoom Lens lets you go smoothly from wide-angle to telephoto shots at the press of a button. "T" lets you zoom in for tight shots and "W" lets you zoom out for wide angle shots. This would be a great advantage for users who can't get close to their subject, such as parents taping a high school football game from the stands.

You can use most standard photographic filters with these cameras. Check with Consumer Mail to see what's available and to offer suggestions to your customers.

Red Record/Pause Button

The Red Record/Pause Button controls the recording and pause features of the camera. When you press the red

record/pause button, you activate the camera and recording begins. Pressing the red record/pause button a second time will put the camera in the pause mode. As soon as you press the red record/pause button again, you are back recording.

These cameras are fully automatic, so all you have to do when shooting is: turn the power on, point the camera at your subject, and press the red record/pause button to record. Try it and you'll see how easy it is to be on your way to movie-making. Look out, Hollywood!

Auto Focus

The Auto Focus feature which is built into the camera automatically readjusts and focuses on the object you are trying to record. Auto Focus is used primarily indoors within a 30 foot range. It allows you to clearly see the subject you are trying to record. If you are focusing on a subject within 30 feet, you can relax and let the camera focus automatically for you.

You should use the Manual Focus setting when:

1. Objects are more than 30 feet from the camera whether inside or outside;
2. The focus point or object is not in the center of the picture;
3. Close and distant objects are both near the center of the viewfinder;
4. You are taping an object on a black surface or on water;
5. The focus point is behind a window;
6. The focus point is moving rapidly; or
7. You are taping in snow or fog.

To operate the Focus manually, set the Focus switch to Manual and use the Power Focus buttons while looking through the viewfinder. The power focus is for use during manual operation and it can be used for everything from very close focusing to infinity.

For best results in setting the camera for zoom shots, always zoom in as close as possible to your subject matter and then focus manually. As long as the subjects stay the same distance from the camera, they will stay in focus as you then proceed to zoom in and out.

If you press the Instant Auto Focus when on Manual Focus you temporarily activate the Auto Focus system.

Iris

The Iris control, like a venetian blind, lets more or less light in to the camera. When you position the Iris on Auto, the MovieCorder Camera automatically adjusts for changing lighting conditions. When in Auto, you need not be concerned about setting the controls on the Iris. The camera will do all the work for you. So, for best overall results, use this setting.

There will be times when you will need the Manual setting to compensate for tricky lighting conditions. For instance, when your subject is standing in a doorway with a dark room showing behind him, the background is much

darker than the light on the subject you want to shoot. Because of the very dark background, the Iris will automatically open and let in more light flooding your subject. To balance this picture, you will have to let in less light. In this case you would adjust the Iris control toward Close, to let in less light. The picture is now properly balanced between light and dark.

The opposite could also happen. Suppose your subject was standing in front of a window flooded with sunlight. Now, the background is much lighter than the subject and the Iris will automatically close to let in less light. You will need to balance this picture by opening the Iris to let in more light. Adjust the Iris Control toward open to allow for more light. Stop adjusting when the picture is properly balanced between light and dark.

You can also use the Iris control to fade in at the beginning of a scene and to fade out at the end. This will give your productions a professional look. Newer cameras have a single fade control that accomplishes the same effect.

Fade-in/Fade-out

This Fade-in/Fade-out feature provides professional scene transitions. You can press Fade-in/Fade-out to fade in at the beginning of a scene or fade out at the end. The sound also fades in and out along with the picture. Experiment with this feature so you can fully explain and demonstrate it to your customers.

Variable Speed Shutter

In a typical 35mm SLR still camera, a shutter is a mechanical door that opens and exposes the film to light and then closes. In an electronic camera, there is an electronic shutter which determines the length of time light is received and turned into electricity for each video frame.

Our MovieCorders have a Variable Speed Shutter feature. Variable speed means a variation on how long the shutter is opened for each frame of video. Videotape is recorded at 30 frames per second and in a normal mode, the shutter is open for 1/30th of a second and then closes. This means the shutter opens and closes 30 times per second. When you change the shutter speed, the shutter still opens 30 times a second but the length of time it stays open changes. Let's say you change the shutter speed to 1000. The shutter will open for 1/1000th of a second within the duration of the frame, and then it will be closed for the remainder of the frame.

The Variable Speed Shutter lets you analyze fast action when played back at a slow speed. The Variable Speed Shutter feature lets you record fast action such as your tennis or golf game that you want to watch later using the freeze-frame or slow motion feature. This Freeze-Frame/Slow Motion feature that our VCRs have lets you stop the action while playing a tape. The Variable Speed Shutter feature reduces blurring

that might occur when you playback in a freeze-frame or slow motion mode.

For best results when using this feature, your customers should use a 4-head special effects VCR or a 4-head, double azimuth VCR for playback. Refer to the VCR section of this manual for complete definitions of 4-head, and double azimuth.

This is your opportunity to sell a 4-head VCR to your customer. So take advantage and sell add-ons. Always remember to advise your customers that they should have a 4 head machine to get maximum benefit from the variable speed shutter during playback.

The MovieCorders lets you choose which shutter speed you want to record in, 500, 1000 times a second. Each time you push the High Speed Button to the right, a different speed is indicated in the viewfinder. After you have selected your desired shutter speed, you operate the MovieCorder in the usual manner. If you want to change speeds, you should pause the camera first. You will need to make some test recordings with this feature to see what happens to the picture at the different shutter speeds during playback.

When using the Variable Shutter Speed feature, always remember:

1. You need more light than normal for high shutter speeds. Lighting is critical. The faster the speed the brighter the light must be;
2. The auto-focus system might not work properly with some fast action scenes, so focus manually; and
3. To return the Shutter switch to Normal after your fast action recording.

Sell this feature to your sports-minded customers who want to analyze their swing in golf, their backhand in tennis, their swimming form, their swing in ping-pong, or their child's swimming strokes. Create excitement, show enthusiasm, and sell the features and the benefits.

Viewfinder Adjustment Control

The Viewfinder Adjustment Control lets you adjust the ViewFinder so you can see exactly what the MovieCorder sees. This makes your pictures look professional, allowing less room for error in missed shots, shots not in fullview, or shots out of focus. Each person who uses the MovieCorder might have to readjust the viewfinder.

Review

The Review feature is an instant replay of what you just recorded. It lets you review the last few seconds of a recording to check if the camera settings were correct. To review during recording, you first stop the tape and then press Review. If you are not recording, just press review. The tape rewinds a few inches and plays back your recording up to the point that you left off. To continue recording, press the record/pause button again.

Earphone Jack

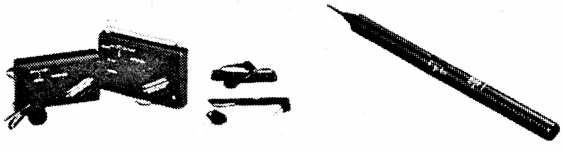
The Earphone Jack plays a dual role. When an earphone is plugged into the

jack, you can listen to the audio that you previously recorded when you playback through the Viewfinder, or you can listen to the "live" audio your microphone is picking up while you are recording.

The earphone jack is standard on all of our MovieCorders but the earphone is an optional accessory. Here's another opportunity for an add-on sale.

External Microphone Jack

The External Microphone Jack allows you to attach an external microphone to the camcorder for better sound quality. This is your opportunity to sell add-ons. Recommend the shotgun mike or the FM Wireless mike system.



Audio/Video Input and Output Jack

The Audio/Video Input and Output Jack lets you play back tapes on TVs, or copy tapes to or from the MovieCorder. An optional A/V input cable is necessary to copy a tape from a VCR to the MovieCorder.

Digital Counter Memory

The Digital Counter Memory feature lets you mark the tape and return to specific locations on the tape. This feature is also on our VCRs and is operated in the same manner.

Date Code or Character Generator

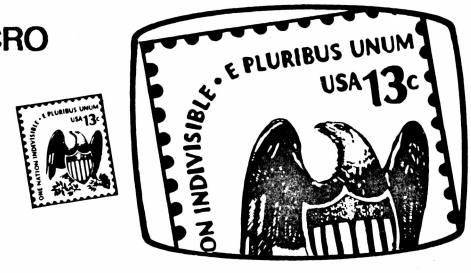
The Date Code or Character Generator feature lets you record a month, day, and year code on your videotape. Review the owner's manuals for step-by-step instructions on how to set these codes.

The Date Code is recorded if it appears in the viewfinder while you are taping. If you do not want to record the date code, press Display until nothing is displayed in the viewfinder. The camera will maintain the date code while the power is off.

Self Timer

The Self Timer feature lets you, the movie-maker, get into the picture. It is recommended that the camera be mounted on a tripod when you are using the self timer. The tripod connects to the bottom of the tripod foot which is located on the underside of the camera.

MACRO



The MACRO feature lets you record objects close up, virtually filling the screen with the object.

This feature is great for Botanists who want to record the detail of a single flower close-up, to record the close-up live action of your child's ant colony or to

record a close-up of your still photos. You do not need special lenses for this close-up photography. The macro feature lets you record objects from as close as 3/8" away.

Tele-Macro Focus

Tele-Macro Focus lets you use maximum telephoto magnification at distances as close as 2 feet. This feature is great for taking portrait pictures of family members at social gathering.

This feature allows you to get in close so that you fill the screen with your child's smiling face after they've blown out the candles from a birthday cake.

Experiment with these MACRO features. Get to know how to use the camera so you can explain them to your customer.

Auto White Balance

Auto White Balance ensures natural color reproduction in natural or artificial light. Adjustment of the white balance is necessary so that white objects record as white and colors appear natural.

Backlight/Gain-up

The Backlight/Gain-up feature lets you adjust for unusual lighting conditions. When the camera senses that there's not enough light to shoot the subject, the word light will appear in the viewfinder. To correct the problem you can either increase the amount of light, or you can press the backlight/gain-up button to make the image brighter.

If the available light happens to increase, the camera will temporarily disengage the gain-up mode. If the light level drops again, the gain-up mode will switch back on. To turn the gain-up mode off, simply press the backlight/gain-up button again. This feature gives our MovieCorders the ability to shoot in low light conditions.

Interval Recording

Interval Recording gives the customer the ability to compress time by automatically taking one second shots at thirty second intervals. Businesses can use this feature to do time-motion studies. But it's possible to have a little fun with it, too.

This time-lapse recording is great for examining slow-developing action such as the opening of a flower.

Index Recording

Index Recording automatically records index marks at the beginning of new recordings. Indexing your tapes while recording makes it easy to find desired program segments when you play back the tape in a VCR that has the VHS Index Search System (VISS) feature. Refer to the owner's manuals for index playback instructions.

The index signals are automatically recorded when: you turn on the camcorder and begin recording; you insert a cassette and begin recording; you switch from the VCR mode to the camera mode and begin recording; and when you press record to start recording from the stop mode.

Flying Erase Head

The erase head is located on the spinning head drum adjacent to the record/play head. Because it is located on the spinning head drum, it is referred to as the flying erase head. The flying erase head eliminates the undesirable "glitch" or picture "break-up" between recorded segments or scene transitions. No annoying streaks or lines when you skip from one scene to the next.

Audio/Video Editing (Dubbing)

All of our MovieCorders include Audio and Video Editing. Dubbing is an editing function which allows you to change either the audio or the video track, without disturbing the other.

Audio dubbing allows you to replace all or part of the original audio signal, without changing the picture. Video dubbing, or insert editing, lets you change pictures, for cutaways or close-ups, without changing the sound on the original tape.

This feature can be used to give a real professional look to your video productions. Be sure to study the manuals and practice using the editing functions so you can explain them to your customers.

Character Generator, or Titler

Putting a title screen or credits on your videos is a snap. Just set up the titler ahead of time, and when you're ready to put it on, press the Titler button. Press the button again to take if off. You can store two different title screens in the MovieCorder's memory at the same time. You could make an animated silent movie with caption screens and background music.

Title Graphics Grabber/ Super Imposer

This feature can be used to shoot writing or type off a piece of paper. Black lettering on white paper works best. Take a shot of the paper, ensuring it's in focus. Press the Memory Store button. The image is stored as a low-resolution, monochrome graphic, and it appears in the viewfinder. You can turn the image on and off by pressing the insert button. The color button gives you a choice of different colors the graphic can appear in on your final tape.

The MovieCorder can actually super-impose the graphic over the scene you're shooting. You can accomplish this two different ways. You can either insert the graphic as you record, or add it later as you dub the tape.

You can even reverse the image by either holding down the color button for about 2 seconds while it's in the viewfinder, or just by pressing the color button while the image isn't visible.

Have some fun with this. Experiment with the camera. You can create, add little editorial comments, or just add super-looking credits to your great video artistry.

By reversing the image, you create even more possibilities. You can make a frame just by shooting a round or oval

piece of black paper against a light background, and then reversing the image. With the frame, you can make video photographs, or even just block out unwanted background scenery.

8mm MovieCorder

Our 8mm MovieCorder has some special features not found on the full-size VHS cameras which you should be familiar with so that you can explain these features and their customer benefits. Experiment with this MovieCorder until you are proficient in operating and explaining these features.

Digital Auto Focus

A unique feature of the 8mm Movie-Corder is the through-the-lens Digital Auto Focus. When the camera is in the AUTO focus mode, the lens electronically computes the amount of light reflected off the subject in the center of the viewfinder, then it focuses on that object. When you move the MovieCorder, the auto-focus system automatically refocuses.

In most cases, the Auto Focus system provides excellent results. But, there are special situations in which use of the Manual Focus will be more desirable. Refer to the owner's manual for a description of these situations.

Focus Reverse

The MovieCorder is equipped with a Focus Reverse button which temporarily switches from AUTO to MANUAL. The focus remains fixed during the pan, producing a smooth picture as you move from one subject to another.

Hi-Fi AFM Sound

Most camcorders record on the linear audio track which produces a noisy, limited frequency response sound. With Hi-Fi Audio Frequency Modulation (AFM) sound, audio and video are recorded using the spinning head drum on a helical track. AFM offers recordings for sensational hi-fi monaural sound with better frequency response and a better sound.

AC Adapter/Charger

The AC Adapter/Charger is an accessory that comes with the 8mm MovieCorder. It's used to power the MovieCorder from an AC power source and for charging the Ni-Cad battery. This is unique because it has a built-in circuit that automatically adjusts for AC voltages between 100 and 240 volts. This means that the Movie-Corder can be used to record in most foreign countries without a special adapter for foreign AC plugs.

You can record in a foreign country, but it's not possible to playback the recorded tape through foreign TV sets because they use a different video format. Customers who plan to record and playback in a foreign country need to take along a small portable TV in addition to the camcorder.

Video Playback

Our MovieCorders offer you three options for video playback. You can take the tape out of the MovieCorder and

load it into a VCR for playback; you can playback through a TV or Monitor from the camera itself; or you can get instant video playback through the viewfinder and listen to the audio with an optional earphone or headset with a 1/8" plug.
This playback feature allows you the opportunity of immediately reviewing your recordings right there on the spot. You have instant playback at the touch of your fingers. It allows you the option of reviewing and reshooting scenes when you want.

You can use the Counter to go back to a specific point in your recording and proceed to record the scene again or re-shoot a close-up of a particular scene.

Imagine the fun you and your customers will have with these exciting features.
It allows you and your customers the opportunity to be creative and imaginative in your movie-making recordings.

Using the MovieCorder

Now, let's discuss how to use the MovieCorder as a VCR. The Movie-Corder operates only in the SP mode, so it's great for pre-recorded movies as well as your own tapes. Of course, you can use the videotapes in a regular VHS VCR, but with the MovieCorder, you can use you camcorder as a VCR by connecting it to your regular television set. Detailed hook-up instructions are in the owner's manuals. Review these so that you are knowledgeable to help your customers.

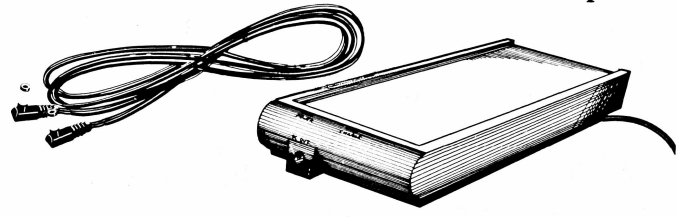
To use the VCR on your MovieCorder as a VCR recorder, your customer will need an A/V input jack adapter, which is an optional accessory. Again, this is your opportunity to sell add-ons and do some suggestive selling.

Your customer will not be able to use their camcorder to record broadcast programs or other material if they do not have this optional accessory. You can also sell your customer the Gold Video Dubbing Kit, which supplies all the necessary accessories to record.

As you can see, our Realistic MovieCorders combines all the features of a video camera and a portable VCR in one light-weight package. You can record and playback movies anywhere.

MovieCorder Accessories

Our MovieCorders come with the following supplied accessories: carry-ing case; one extended life battery pack; AC adapter/charger; audio/video output cable; and shoulder strap. RF Converter/ Modulator comes with a cassette adapter.



Optional accessories are available at Radio Shack and can be ordered from Consumer Mail for all Models. You can order DC power cords (which enable you to connect the MovieCorder to a 12 Volt source), DC battery charger for 8MM MovieCorders, an Audio/Video Input Adapter for the VHS MovieCorder (that lets you record from a second VCR or

any video source), filters for lens protection and special effects, and lens extenders.

Always provide your customer with the assistance they need to reach good buying decisions to meet their needs. Make sure you sell accessory items.

Hints for Better Videotapes

An important plus when selling MovieCorders is your knowledge of movie-making techniques. Your local library has many books and video tapes dedicated to the techniques of movie-making. If you have the time and the opportunity, it would be beneficial for you to review these materials. When you are in the store, you should practice with our MovieCorders, experiment and learn by doing. Our MovieCorders are simple to use and your practice videotapes can be used again and again.

Many suggestions to make your productions more professional involve the use of light. The Realistic MovieCorders can record and produce good quality pictures in most lighting conditions, but more light is usually better. If required by your customer, a camera light may be obtained and attached to the accessory shoe on the camcorder.

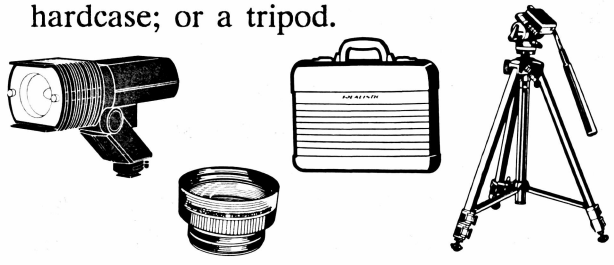
Experiment with light in all types of conditions and advise your customers accordingly.

When moving the MovieCorder, slow is the name of the game. You do not want quick movements and should avoid fast jerks that look awkward during playback. Practice moving the camera slowly. An investment in a tripod would help keep your hand steady. Only practice and more practice will help develop steady camera movements.

As with camera movements, too much zooming in and zooming out distracts from the production. When you do use the zoom controls, keep the motion smooth. Always zoom in one motion, not in several jerky motions. Again, practice is the key.

Our MovieCorders are equipped with a built-in microphone which picks up sound from only a few feet away. However, for distant sound sources, a super-directional shotgun microphone might be better. For professional audio, you might consider an FM wireless microphone or an external microphone. You can attach an external microphone to the accessory shoe on the top the camcorder and plug it into the external microphone jack.

Other accessories are also available to make your customer's video productions a work of art. These accessories are: a video light; a telephoto lens; a deluxe hardcase; or a tripod.



These added accessories will give your productions and your customers an added look of professionalism.

Selling MovieCorders

Radio Shack offers your customers top

quality MovieCorders with the latest technology backed by a support and service operation that stands behind customer satisfaction. Other retailers sell only the camcorder and not the accessories. We offer the product and the accessories necessary to make your customer's productions worthwhile and enjoyable for the entire family. Take pride in our MovieCorders and make Radio Shack your customer's Camcorder Headquarters.

Use the 14 steps to sell camcorders. During the Preparation Stage, you should have the MovieCorders displayed, ready to operate with batteries charged and tapes loaded-ready for the customer.

Greet your customers by taking pictures of them as they enter your store. Take pictures of their children and play the recording back asking: "Have you ever taken video pictures of your family?" Get them involved, wanting to know more.

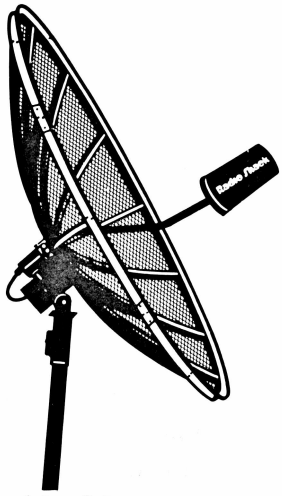
Qualify your customer by asking what important events are coming up? Ask how do they record family events now? With snapshots, home movies? Stress the benefits of taking video pictures.

During the presentation, it's hands on for the customer. Encourage your customer to pick up the camera, point and shoot, and see how easy and fun it is to use. Get the customer involved with the product and sell the ease of operation, the benefits of owning a MovieCorder, and the fun their family will have in watching themselves.

Remember to sell the Tandy Service Plan. Your customers can have peace of mind that if anything goes wrong, they are fully covered. Make sure your customers are informed and know how little it costs for this added protection.

And finally, Closing should be an emotional appeal. Your child will never have another 3rd birthday, you'll never have another 20th anniversary. While you're thinking about it, you are missing memories that will last a lifetime. Create a sense of urgency for your customer that they need to invest now. Create the excitement, create the fun atmosphere and reap the rewards.

SATELLITE



Welcome to the exciting world of home satellite television. It's a dazzling world filled with feature films, top sporting events, entertainment, children's programs, music videos, news, weather, and more. Over 200 channels of programming alternatives 24 hours a day.

At Radio Shack, we see building waves of interest in home and educational satellite systems, and we want to be in a position to provide our customers with the best value available.

As a Radio Shack salesmaker, you're expected to be a source of information and advice for your customers. You'll help them look at their needs and make the right buying decisions. There's no product line we carry where your role is any more important to your customer.

This section is designed to provide you with the important information you'll need to assist your customers. We'll provide background on the satellite works, and we'll discuss the key steps to assisting your customers and making the satellite sale.

Now let's discuss a little about the background of satellite systems and how they work.

How Satellite Works

Many people think that the concept of satellite television started with the orbiting of the Russian satellite Sputnik in 1957. However, the concept was actually first presented by a science fiction writer named Arthur C. Clarke in 1945.

Clarke envisioned satellites being placed in orbit 22,300 miles above the earth. He correctly theorized that at that height the satellites would orbit at the same speed as the earth's rotation and therefore appear to be stationary.

Today there are over 20 satellites positioned in this stationary, or more accurately, "geosynchronous" orbit above the equator. This area is known as the Clarke Belt, named for Arthur C. Clarke.

Programming networks transmit signals to the satellites which relay them back to earth covering large geographic areas. These satellite signals are then accessible by local network affiliates and to home satellite television users.

Home satellite television experienced an extremely rapid period of growth only to be interrupted in the early 1980's when many programmers began scrambling signals to eliminate unauthorized reception by hotels, motels and bars.

Today over 200 channels of programming are available by satellite, some requiring a decoder, many at no cost. With the operation of the programmers

and the home satellite television industry, owners can now subscribe to a variety of low cost premium programming packages.

Satellite Signals

Satellite system signals are presently classified into two types: C Band; and Ku Band.

At the present time, C Band Signals are the primary delivery system of programming for customers and cable companies in the U.S.A. C Band Signals have a maximum output of 12 watts.

Ku Band Signals can be more powerful with maximum output exceeding 200 watts, however, currently, lower-power 20-watt satellites are being used.

The Ku Band technology of the future is called Direct Broadcast Satellites or DBS. DBS will be substantially more powerful with medium to high power output; medium power to 50 watts and high power to 200 watts.

Major Home Satellite Components

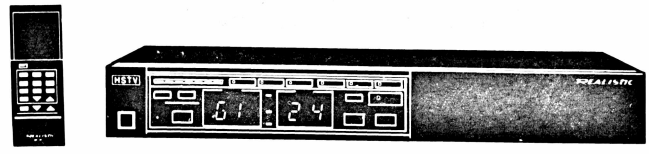
The elements that make up a home television satellite system are:

1. the Receiver;
2. the Dish;
3. the LNB; and
4. the Feedhorn.

Signals are transmitted from the satellite in orbit to the satellite dish. The satellite dish catches these signals and reflects them to the feedhorn. The feedhorn picks up these signals and directs them to the LNB, Low Noise Block Downconverter. The LNB amplifies these signals by as much as a million times and converts them to lower frequencies. These lower frequencies are then sent by the cable to the receiver. The receiver then converts them to frequencies that are usable by the television.

Let's now look at each of these elements in more detail.

The Receiver



The Receiver converts these frequencies to ones that are usable by the TV. Some receivers can receive both C and Ku Band. Newer receivers include a descrambler. A descrambler is a device that allows the customer to receive scrambled signals they have paid for.

Some programmers are alternating the broadcast signal they're transmitting to prevent unauthorized use. When a signal is scrambled, you can't receive a normal picture. You'll see a pattern of wavy lines on your TV. Home Satellite TV systems can't receive signals without a descrambler and the payment of subscription fees to programmers, just like you would to cable TV. Fifty-seven programmers have scrambled their signals. There are still 100 channels that are not scrambled.

There are several competing scrambling systems out in the market. They are Video Cipher II (VC II Plus), BMAC, OAK/ORION, and D-CODE.

A receiver which includes a descrambler is called an IRD, or Integrated Receiver Descrambler. The decoder is built into the receiver. Part of this decoder system is made up of a unit called the module. This module actually does the decoding.

Satellite Receivers are typically built off-shore and do not come with these decoder modules installed. The module is added to the receiver by the distributor, the dealer or a USA division of the foreign company.

Program Packaging/Program Bundling

Some dealers offer customers an opportunity of obtaining the module when they buy programming packages. Several sports services, news services and premium programmers may be bundled together with the decoder module and offered at one low price to the customer.

Radio Shack may offer our customers a way of obtaining this programming package advantage. You will be advised of these details in your promotional package.

It is a federal offense to export a Descrambling Module because the module contains government-controlled information. Make your customers aware of this law.

The Dish

The signals transmitted from the satellite are weak, about 10 watts, and this is the reason for the size and shape of the dish. The dish catches the signals and reflects them to the feedhorn.

In today's technology, the smallest dish that can be used in the contiguous 48 states in the U.S. is a 9-foot dish. You can get reasonable-quality signals on all satellites.

With the new technology of Direct Broadcast Satellites, we expect the dishes to come down in size as the power of the satellite increases.

Radio Shack's marketing strategy is for do-it-yourself installation. Our Home Satellite TV System is targeted to the customer who wants to install their own satellite system. We target our satellite system to the same people who install their own TV antennas. So qualify your customer by asking questions.

Our Satellite System is designed to be ground mounted. Any other kind of mounting, i.e. roof, pole mounting, should be done by a qualified installer.

The LNB

The Low Noise Block Downconverter or

LNB takes the microwave signal coming from the satellite and converts it to a lower frequency that the satellite receiver can handle.

Here's an area of major and constant change in the industry. The lower the temperature, the better the LNB. 40 degrees is better than 60 degrees LNB.

Radio Shack sells the state-of-the-art in reliable LNBs. It might not be the lowest degree in measurement, but it is designed to work with the rest of the satellite system components to give your customer a great picture.

The Feedhorn

The Feedhorn is the active antenna, while the dish is referred to as the passive antenna. The feedhorn determines the polarity of the signal being received. In simpler terms, the feedhorn determines which direction the signal is coming from.

Polarity can be measured in a:

1. horizontal;
2. vertical; or
3. circular direction.

For more information on these components read the owner's manual, the installation manual, and watch the current satellite videotape.

Now let's talk about how you can apply the steps of the sales process to your satellite sales effort and increase your sales.

Key Steps in Selling Satellite

First you need to allocate a special area for the satellite display in your store. A quiet area if possible or at least a designated area away from the heaviest traffic.

In this area you should have Point of Purchase materials including:

1. an easel poster;
2. site survey kits;
3. satellite dish aiming program;
4. computer data printouts;
5. a television, preferably a 13" color set;
6. a VCP, with auto playback mode, activated;
7. Radio Shack's Home Satellite TV System Brochures; and
8. satellite TV guides such as Orbit or ONSAT Magazines.

The Satellite Dish Aiming Program and the Home Satellite TV Brochure can be ordered from the Force Feed Warehouse. The Site Survey Kit can be ordered from your Regional Warehouse. The easel poster will be sent to your store.

Let these items be your silent salesmakers. Have site survey kits (68-1070) and computer data printouts (DB 101 Satellite Dish Aiming Program) available for the customer who seems

interested in satellite. Type the customer's name and address into the satellite dish aiming program to personalize the data print-out, and call this customer back in a few days to follow up. This simple customer service may help you make a sale or get a referral.

Site Survey Kits

Your customer must do a site survey of their property to determine if it is suitable for a satellite system. It is not recommended to sell a satellite system unless a site survey has been done. We have had problems in the past with customers investing in one of our Home Satellite TV Systems and returning it because they did not do a survey and could not properly use the system because of obstructions around their property.

Give your customer a print out and have them follow the instructions that are included with the Site Survey Kit.

The customer should be looking for anything blocking a direct line of sight to the satellite, i.e. trees, houses. Have the customer allow for growth; trees will grow and houses might be built on open lots. The more care that is taken with the site survey, the more reliable the results.

If your customer is unable to perform the survey, a professional satellite installer should be engaged by the customer to perform this service.

Qualifying

Qualifying is one of the most important steps of the sales process because, unless you know what your customers want, you can't possibly satisfy their needs. And with satellite systems, you need to know more about the customer than you do with most other products.

As you look at the following list of qualifying questions, ask yourself, "Why do I need this information?" You will quickly see that each and every question has a specific purpose that will help you close more sales.

The first few questions will tell you about the knowledge level of the customer and let you know how much basic information you must provide.

These questions are:

1. How familiar are you with satellite systems?
2. Have you been shopping for a system long?
3. What type of programs do you like to watch?

The next questions help you zero in on specific features--such things as number of channels, stereo outputs or multi-receivers.

1. Are you on cable?
2. Do you own a stereo system?
3. How many TV's are in your home?
4. Where do you plan to place the

receiver?

This next question alerts you to the need for parental lock-out and adds to interest in children's programming.

Do you have children?

Next we need to know if there'll be a problem with installation.

Do you own your own home?

And finally some questions that will give you background on zoning problems, and do-it-yourself installation.

1. Where do you live?
2. About how large is your yard?
3. Do you have large trees?
4. Which direction does your home face?
5. Do you wish to install the system yourself?

As you become more comfortable with the qualifying step, you'll be able to add more of your own questions. Take the time to listen carefully. And ask additional questions to clarify issues. Remember, qualifying gives you the information that you need, and it helps build rapport with your customer.

Presentation

The next step we want to consider is the presentation. Remember that during the presentation/demonstration step the customer is looking for benefits not features. It's critical that you know how to turn features into benefits because benefits build value and help you close the sale.

Try to get into the habit of following this formula:

The Feature - What Is It?;
The Function - What Does It Do?;
The Benefit - What's In It For Me?

Features turned into Benefits

Here's a list of important features of the system turned into benefits. Use them with your customers.

Radio Shack is a system of over 7000 neighborhood stores and dealers located throughout the U.S.

When you buy from Radio Shack you can count on a fully matched satellite system that is engineered to be reliable.

Our system is the only one in the industry that has also been designed for do-it-yourself installation, that can save you hundreds of dollars. We have an installation manual to show you how to install it, or you can have Digitron Communication Inc. install it for you.

Digitron is the only Radio Shack-recommended installation service for the Realistic Home Satellite Television System. Digitron personnel are skilled professionals, highly trained in their field, and have the experience to install and program the Realistic System.

A Satellite Hot-line is provided for your use so that all of your questions can be answered by friendly and knowledgeable personnel.

Our state-of-the-art perforated dish is designed for optimum performance and appearance. We use a poly-coated aluminum dish with galvanized steel hardware so the system will look great and perform at its best for years to come.

The perforated dish is more accurate for KU band. You get the attractiveness of mesh to see through with the accuracy of a solid dish.

The horizon-to-horizon mount can withstand strong winds and it doesn't freeze up in bad weather, and

It's also self-cleaning due to the augar motion of the worm gear.

Our Home Satellite TV system is operable in 75 mph winds and is engineered to survive 120 mph winds, so the system remains worry free.

100 feet of UL listed cable is supplied with the system, and 50 and 100 feet extensions are available so you can position the antenna anywhere in your yard.
We offer financing options so you can make easily affordable payments while you enjoy the benefits of your own system.

A site survey kit is included which takes the guesswork out of locating the best place for your satellite system ensuring optimum performance.

And we also provide a customized computer data printout which make installing your home satellite TV system easier.

Our system offers limit settings on the motor and receiver so you can't accidentally damage the system by moving it too far.

What Accessory Items are Available?

In addition to the state-of-the-art features that our system provides, we also make available several accessories that will allow your customer to enhance their home satellite television system. These include:

Extension Cable Kits

The antenna is designed to be positioned 100 feet from the receiver; however, there are situations where the antenna will need to be farther from the receiver, and we provide extension cable kits in 50 or 100 foot lengths. These kits are available from Consumer Mail. Your customer can use more than one kit if necessary to achieve the desired length. These cable extension kits come with everything that they'll need to join the cables effectively. Total length should not extend beyond 350 feet unless they use a Radio Shack in-line amplifier to amplify the signal between the antenna and the receiver.

KU Low Noise Block Downverter

KU low noise amplifier with blockdown converter amplifies and interprets signals from satellites. It's used with our Satellite Reception System.

2 and 4-Way Splitters

Both 2 and 4-Way Splitters act as a power divider and signal splitter to be used with more than one receiver. Use with upper block frequencies.

C/KU Boom Stabilizer

C/KU Boom Stabilizer adds stability to the Feedhorn.

C/KU Feedhorn Assembly

Home satellite TV C/KU Band Feedhorn collects signals broadcast from satellites. Designed for use with combination C Band and KU Band Satellite Systems.

Dual Feedhorn

Dual Feedhorn for Satellite TV System allows simultaneous access of 24 channels by multiple receivers.

Special Order Item

The Home Satellite TV System is not being stocked in your stores, but is a special order item. Get an Advance Deposit on the system from your customer and follow the procedures outlined in the SOM or off the POS system.

Closing the Satellite Sale

When closing the satellite system sale, alternative type closes seem to work best.

Here are some closes you can use to get the order.

1. Would you want to pay cash or use our Radio Shack credit plan?

2. Did you want to install it yourself or have Digitron Communications Inc. install it for you?

Digitron Installation

Radio Shack does offer installation through an outside or independent organization. Explain to the customer that if they don't want to do the installation themselves, Digitron Communications Inc. will do the installation for them. Give them a Digitron Communications Inc. Brochure and discuss the options with them.

Remind your customers that the cost of this installation is NOT included in the price of their Realistic System.

For additional information you and your customers can call Digitron at 818-882-8876 or for installation orders only they can call Digitron at 1-800-238-8876.

With this additional service we're sure that installation will no longer be a problem for your customers.

If at this point the customer is not ready to buy, ask them what has them concerned. If executed properly, this step of handling objections can salvage the sale at the last minute.

Satellite Objections

The most common objections for a satellite system are:

"The price is too high."

Re-establish value through features and benefits. Know the competition. Radio Shack is not always the least expensive, but we strive to have the best value.

"We want to think about it."

Identify the customer's objections. Stress the features and the benefits and close again.

"We don't think it'll fit in our yard."

Get the site survey kit into their hands. Give them one and get their name and phone number. Call them the next day and find out the results of the site survey. Then close the sale.

Satellite systems are being purchased every day by the public. And we want our market share. Make your customers aware of the future of satellite.

The future is going to be filled with more sports, entertainment and distance learning. Schools will be broadcasting educational programs to other schools via satellite to help close the educational gap, to expose more students to different educational programs, and to help motivate more students. Your local school system is your next potential customer for satellite sales.

We hope these tips and the information we have supplied will assure that you're getting your share of satellite sales. Make satellite your business. Review this material more than once to absorb all the information. Read the owner's manuals and the installation guide.

And if you've got a question, call the Satellite Hot Line. Radio Shack maintains a customer help line. There are two numbers; one for employees and one for customers.

The customer help line number is:
(817) 878-6890 and
the employee help line number is:
1-(800) 321-6680.

Remember, if you are knowledgeable, you can educate your customer. Customers who understand the features and benefits of a Radio Shack Satellite TV System will invest in one and become one of your valued customers. So become knowledgeable and sell satellite.

GLOSSARY OF VIDEO TERMS

A/B Switch

Term used to describe switches that connect either of two independent inputs to a common output. The user is given a choice between switching to input "A" or input "B." A common application would be VCR (A) and Antenna (B) inputs connected to a single TV (output).

A/C Adapter Charger

A battery charger cord for our Camcorders. The A/C Adapter-Charger plugs into any AC outlet. The camera can be used with the A/C Adapter-Charger plugged into a wall socket, but mobility is limited to the length of the charger cord.

Analog

VHF, UHF and Cable TV signals, which we call radio frequency, and the separate audio and video signals, which we call base band, are all part of the larger category of signals called analog.

Analog Signals

Electronic signals which are transmitted in an on or off or an infinite number of variations in between. Variations in this signal tells the receiver what to do.
See Digital Signals.

Antenna/Cable Pass Through

This feature allows users to watch programs of their choice (using the TV tuner) while recording another program (using the VCR tuner). It is a switch or button on a VCR (usually labeled TV/VCR) that allows all input RF signals to pass through the VCR and be processed by the television tuner, to be processed by the VCR tuner and then sent to the TV on channel 3 or 4.

Audio

Base Band Sound Signals.

Audio Dub

Lets you add comments or music to supplement your recording's audio. See Audio/Video Editing.

Audio Frequency Modulation (AFM)

A method of recording hi-fi audio on videotape, along with video signals. Audio is recorded in the same place as the video, not on a separate track, to produce a notable superior hi-fi sound.

Audio/Video Editing — Lets you add comments or music to supplement your recording's audio; lets you edit/change the recorded video image by replacing an existing video image with a new one.

Audio/Video Input & Output Jack — Lets you playback tapes on TVs or copy tapes to or from the camcorder. An optional A/V Input Cable is necessary to copy a tape from a VCR to the camcorder.

Auto Focus — Camera feature that automatically re-adjusts the focus of the lens so the object in the center of the viewfinder is in focus. Allows the user to "point and shoot" without concern for focus adjustments.

Automatic Disc Protection — Protects the disc while it is in the disc tray, even if you turn off the Disc Player.

Automatic Fine Tuning (AFT) — A method whereby a TV or VCR Tuner automatically "locks on" to a station and does not drift off the frequency. Electronic circuit in a television set that automatically adjusts tuners with temperature-sensitive components for optimum reception of a transmitting frequency under varying temperature conditions. (Not necessary with PLL Tuners.)

Automatic Head Cleaner — Head Cleaner that is part of the VCR operation. The head is automatically cleaned everytime the tape is loaded into the VCR machine.

Automatic Random Play — The disc player automatically selects and plays a random sequence of tracks on the disc when RANDOM PLAY is pressed.

Automatic Timer Recording — VCR feature consisting of a clock with a programmable memory that automatically starts and stops the recording process when the user is not present. Allows users to record favorite programs while away from home.

Auto White Balance — This feature ensures natural color reproduction indoors or outdoors.

AV/Input Jack Adapter — An option used to connect cables to the camcorder when using the VCR on the camcorder as a recorder.

AV or EXT Position

High-end VCRs have a three-way switch for selecting the TUNER position for antenna signals, the A/V or EXT position for separate audio/video signals, and the SIMUL position for receiving the picture from the antenna/cable source and the sound from a separate audio source.

Azimuth Angle

The angle of the video signals on the videotape that are reflected by the different recording speeds, EP, LP and SP.

Backlight/Gain-up

Camcorder feature that lets you adjust for unusual lighting conditions. When the camera senses that there's not enough light to shoot the subject, the backlight/gain up feature will make the image brighter.

Balun

Alternate name for matching transformer. In television applications it converts 75-ohm antenna/cable signals to 300-ohm signals or vice versa. See Matching Transformer.

Base-Band Signals

Signals which have been separated out according to specific function. In television, separate audio and video signals are transmitted independently.

Battery Pack

One of the three-power sources for a camcorder. The one-hour battery pack will operate the camcorder an average of 28 minutes. The extended battery pack will operate the camcorder an average of 48 minutes.

Beta Format

Method of recording video signals on 1/2" width tape in a herringbone pattern using helical scan. Beta cassettes are smaller than VHS cassettes and record up to 5 hours of programs.

Blank Search

VCR feature that lets you locate the end of a recorded section of a partially recorded tape. The remote control is used to locate the end of the recorded section. If there are no blank sections on the tape, after searching to the end of the tape, the VCR rewinds the tape to the beginning, and then the VCR stops.

Brightness — Measure of the amount of light given off by a TV screen. A circuit or control which adjusts or determines this amount of light is called the Brightness Control. (Technical term = luminance). See Luminance.

Cable-Compatible Tuner — Term applied to TV/VCR Tuners that are capable of tuning in cable channels in addition to UHF/VHF channels.

Cable Signals — Television signals loaded onto a cable wire and transmitted over this wire by a cable company to a subscriber.

Cable System Selector — Lets you set the tuner to receive one of three types of cable system channels; either STD, HRC or IRC.

Cable TV — The system of distributing TV signals to homes by cable.

Cable TV Block Converter — Device that converts cable channel RF signals to UHF signals so cable channels can be selected using the remote control (or tuner) of any TV with a UHF tuner.

Camcorder — A combination video camera and video recorder packaged in one compact unit.

Carrier — Radio frequency signal which "carries" the video and audio information for a particular channel.

Cathode Ray Tube (CRT) — Tube that receives electrical impulses and translates them into a picture on its front surface or screen (i.e. television picture tube).

C Band — Lowest band transmitted by a stationary satellite.

CCD Imager — Charged Coupled Device. A computer chip used in video cameras to sense images. The CCD is less prone to burn-in, lag, and streaking than older tube pickups. Uses very little power.

CD Edit — Programs the sequence of tracks to fit the length of tape you are recording on.

Channels

A specified range of frequencies assigned for a specific communication link for radio, TV and other communications to isolate transmissions from each other.

Character Generator/Titler

Press the TITLER button to create up to two titles and superimpose them over the center of the picture. Each title is one line long and can include up to 16 characters.

Charged Coupled Device

See CCD Imager.

Chrominance

The color portion of a video signal, or amount/intensity of color as in chrominance level. See Color.

Clicking Tuner

See Mechanical Tuner.

Coaxial Cable

Cable design in which an insulated center conductor wire(s) is surrounded and shielded by a tube of electrically conductive material. Cable designed so the (-) or (ground) conductor completely encloses the positive (+) conductor (usually a braided wire "sleeve") and prevents (or shields) the (+) conductor from picking up nearby interfering signals. RG-59 and RG-6 are common coaxial cables.

Color

Measure of the amount of color given off by a TV screen. A circuit or control which adjusts or determines this total amount (or intensity) of color. (Technical term = chrominance.) See Chrominance.

Comb Filter

Circuit that removes "video noise" (caused by interference between the color and intensity portions of the TV signal) from the signal and makes the picture sharper by increasing horizontal resolution.

Constant Angular Velocity (CAV)

Standard Video Disc format that uses a recording method called Constant Angular Velocity (CAV). This disc lets you vary the speed and direction of play flawless video quality and flawless still-frames.

Constant Linear Velocity (CLV)

Standard Video Disc format that uses a recording method called Constant Linear Velocity (CLV). This disc can store one hour of programming per side but it doesn't permit random access or still frames.

Contrast

Measure of the difference between the brightest and darkest areas of a picture. Control/circuit which increases or decreases this difference.

Counter With Memory

Measuring device on a VCR that allows the user to note relative locations of programs on the tape. This feature allows users to easily return to a pre-selected point on the tape.

Date Code Generator

Camera feature that records a month, day and year code on the videotape. This feature allows the user to date their videotapes while shooting.

DC Power Cord

An optional DC power cord used to connect a Camcorder to a 12-volt source like your car's cigarette lighter.

Demodulation

Process of unloading (separating) signals (i.e. video and audio) from the RF signal that has carried them in a combined state.

Delayed QTR

VCR feature that allows setting of a delayed start-time, within a 24 hour period, in addition to setting the recording length for programs. This feature is quicker than setting the automatic timer.

Detail Enhancement

In HQ VCRs, a separate circuit that helps sharpen fine lines and the edges of objects. (Not necessarily included in all HQ units.)

Dew Sensor/ Dew Protection

Circuit in a VCR that detects excess moisture inside the unit and prevents VCR operation until the moisture has evaporated. Prevents operation of the machine when moisture on the tape path might cause the tape to stick and tangle. Helps users avoid costly damage and repairs.

Digital Auto-Focus — Through-the-lens digital auto focus done by measuring reflected light from the subject.

Digital Counter Memory — Camera feature marking a specific location on the video tape. This feature allows the user to mark and return to a specific location on the video tape.

Digital PLL Tuner — Extremely accurate frequency-synthesized tuner that uses phase-locked loop circuitry and digital display. It has no moving parts. See PLL.

Digital Signals — Electronic signals that are transmitted as distinct on/off pulses and are interpreted by converting the pulses into numbers. See Analog Signals.

Digital TV/VCR — Basically the same as other TVs and VCRs. The major difference is that digital units convert the video signal into a digital signal which is simpler and easier to handle.

Digitron — Radio Shack's independent outside organization that installs our home satellite TV system.

Direct Broadcast Satellite (DBS) — The newest satellite technology which will be substantially more powerful with medium to, high power output; medium power to 50 watts and high power to 150 watts.

Direct Selection — Remote control tuner feature that allows direct access to any particular channel when the number of that channel is entered using the 10-key number pad on the remote. Allows users to access a channel directly without having to sequence through other channels, regardless of whether the channel desired is stored in the unit's memory or not.

Dish — Satellite signals are transmitted from the satellite in orbit to the satellite dish. The satellite dish catches these signals and reflects them to the feedhorn.

Dolby Noise Reduction

A system that improves tape playback quality by increasing the recorded high frequency (treble) part of the sounds and decreasing them during playback. This restores the original balance between highs and lows while simultaneously reducing added tape hiss during recording.

Double Azimuth

VCR head drum with two sets of heads, one pair adjusted for SP speed and one pair adjusted for EP speed. Results in an improved picture.

Dubbing

An editing function which allows you to change either the audio or the video track, without disturbing the other.

8-Millimeter Format

Method of recording video signals in 8mm wide tape. The small width tape used is packaged in cassettes that are approximately the size of audio cassettes.

Earphone Jack

The earphone jack plays a dual role. When an earphone is plugged into the jack, you can listen to the audio that you previously recorded, or you can listen to the "live" audio your microphone is picking up while you are recording.

Edit Search

Lets you use FAST FORWARD, REWIND and PLAY to precisely position the tape, even while the camcorder is in the camera mode.

Eject Button

Allows you to open the cassette compartment of a VCR or camcorder to load or unload a tape.

EP

Abbreviation for VHS recording speed on a VCR. EP = Extended Play (6 hours on a T-120 cassette).

Erase Head

Located on the spinning head drum of a VCR that eliminates the undesirable "glitch" or picture "break-up" between recorded segments or scene transitions.

Erase Protection

Removable tab on a VCR cassette housing that prevents recording over previous material once the tab is removed. Prevents accidental erasure of important tapes.

External Mic Jack — Allows you to attach an external microphone to the camcorder for better sound quality.

Fade-in/Fade-out — This feature provides professional scene transitions. You can press Fade-in/Fade-out to fade-in at the beginning of a scene or fade-out at the end. The sound also fades in and out along with the picture.

Fast Forward — The tape moves rapidly in a forward direction.

Fast Scan Forward/ Fast Scan Review — The tape moves rapidly in a forward direction allowing you to visually see the picture so you can locate a specific point on the tape.

Flat-Lead Cable — General term for 300-ohm TV antenna lead-in wire. Most designs are flat-looking with conductor wire running at each edge of the flat insulation material.

Flying Erase Head — Video erase head that is mounted on the rotating head drum. Provides exceptionally clean edits between recorded segments.

Focus Reverse — Camcorder feature that temporarily switches from AUTO to MANUAL. The focus remains fixed during the pan,producing a smooth picture as you move from one subject to another.

4-Head VCR — A 4-head VCR is a 2-head VCR with 2 more heads used for special effects.

4-Head Double Azimuth — A 4-head Double Azimuth VCR is a 4-head machine where 2 heads are set at SP and 2 heads are set at EP. Each set of heads is set at their own azimuth. The recorded picture is a better picture: sharper and less grainy. In playback you get a better picture at SP and EP than you would get in a 2-head machine.

Frames — Individual pictures of video signals.

Freeze Frame

VCR feature that allows a single picture on the tape to be read by the heads over and over again while the tape is in the pause mode. That single picture then appears on the screen as a still picture or "freeze frame." Users can pause and examine the details of a single picture of the tape that has special interest for them.

Frequency Response

Refers to how evenly the component reproduces different frequencies. The range of recorded audio frequencies is normally 20 to 20,000 Hz. This is the audible range.

Frequency Synthesized Tuner

Alternate name for a Digital PLL Tuner.

Gain-up

Camcorder feature that lets you adjust for unusual lighting conditions. See Backlight/Gain-up

Glitch

Break-up or distortion of the video signal on a video tape caused by not matching and integrating "sync" or timing signals properly at an edit point. Can appear as momentary jerks, noise, rolls, tears, etc. on the screen.

Heads

Electric components which either "read" or "write" electrical/magnetic signals on a tape when the tape passes across them.

Helical Scan

Method of recording video signals on a tape using a combination of spinning heads and angled movement. It achieves the effects of a coiled spiral (compression of long material into a narrow space).

Hi-Fi VCR Sound

VCRs that record the audio portion of a program using the helical-scan method for recording audio on the larger portion of the tape usually reserved for video signals. Provides a quality sound recording comparable to compact discs and superior to any other home recording method.

High-Contrast Screen

Feature on a television that uses a dark or tinted CRT. This improves picture contrast, especially in brightly lit rooms.

High-Definition TV (HDTV) — Proposed television system yielding sharper pictures on specially designed TV equipment.

High Quality (HQ) — VCR feature offering crisper pictures with better edge definition. Advertising term that can be applied to any VHS VCR that has increased white level clipping capability plus at least one of the following features: detail enhancement; color signal noise reduction; or brightness signal noise reduction. Guarantees that recorded picture from a particular VCR will be better (with HQ) that it would be without HQ.

High Resolution — Picture tube that displays more than 300 horizontal (side to side) lines (250 horizontal lines is average).

High-Speed Button — See Variable Speed Shutter.

Horizontal Hold — Control or circuit that stabilizes and maintains the horizontal (side to side) lines that make up a TV picture. Prevents horizontal "tear" or angling of these lines and maintains them parallel to the natural horizon or "level."

Horizontal Line — The number of horizontal lines in a TV is controlled by the television. 250 lines is average and anything greater than 300 is considered to be high-resolution.

Hue — Control/circuit to adjust the balance between the three basic colors (red, green, blue) in a TV picture. Also called Tint. See Tint.

Imaging Device — Camera feature that converts light from the lens into electrical signals. This feature eliminates lag or burn-in caused by photographing a bright object or light.

Immediate QTR — QTR, Quick Timer Recording, is started manually, then the tape stops recording automatically after a preselected length of time. This type of QTR is handy if you want to begin recording a program while you are at home, and then leave before the program is over.

Impedance

Measure of apparent resistance in an AC circuit that is the same as the actual resistance in a similar DC circuit. (Also, the ratio of pressure to volume displacement in a speaker.) Impedance of components (e.g. 75 ohm or 300 ohm) must match when connected together. Transformers are used at connection points when component impedances don't match.

Increased White-Level Clipping

When a signal is recorded, the VCR clips off the top of the brightness signal at a point where noise and distortion usually occur. However, because of better tape and better VCRs, the point where noise and distortion occur is higher, and the white-level clipping point can be increased. The effect of this is sharper edges in the picture around letters.

Index Recording

Automatically records index marks at the beginning of new recordings. Makes it easy to find desired program segments when you playback the tape.

Index Search/Scan

VCR feature that automatically marks the tape with an index signal when you start a recording. You can quickly locate a specific recording on the tape by using index scan or index search.

Input Select Switch

Switch on a VCR that allows manual selection of the VCR input from either the antenna terminals or the A/V jacks. Allows users to easily select VCR inputs from more than one source.

Insert Editing

Adding a new "scene" between two current ones.

Instant Auto Focus

This built-in camcorder feature automatically readjusts and focuses on the object you are trying to record. Auto Focus is used primarily indoors within a 30 foot range.

In-Sync

Term used in camcorder recording when an edit is made and the next frame begins exactly where it should, in-sync with the previous frame.

Integrated Receiver Descrambler (IRD)

A satellite receiver that includes a descrambler.

Intensity

Measure of the amount of color given off by a TV screen. A circuit or control which adjusts or determines this total amount (or intensity) of color. Technical term = chrominance. See Color and Chrominance.

Interactive Systems

Sophisticated cable systems that send special signals through the cable wire that tell the cable box which channels to unscramble. Interactive systems usually scramble most, or all, of their channels, and they can alter or terminate a subscriber's service from their main office.

Interval Recording

Camcorder feature that gives the customer the ability to compress time by automatically taking one-second shots at thirty-second intervals.

Iris

Camcorder device that lets more or less light into the camera. The camcorder automatically adjusts for changing lighting conditions.

Ku Band

Highest band transmitted by a stationary satellite.

Laser Discs

Video laser discs which are used in a Video Disc Player that come in two formats--standard and extended play.

Lead-acid Battery

A type of battery for your camcorder. These batteries cost much less than nickel-cadmium batteries.

Lens

Camcorder device that is a piece of glass or plastic which focuses light.

Lens Extender

Lens that increases the range of telephoto or wide angle range of the camera's lens.

Liquid Crystal Display (LCD TV)

Television set that uses an LCD, Liquid Crystal Display, to reproduce the picture, instead of a CRT.

Low Noise Block Downconverter (LNB)

Satellite device that amplifies satellite signals by as much as a million times and converts them to lower frequencies. These lower frequencies are then sent by the cable to the receiver.

LP	Abbreviation for the VHS recording speed on a VCR. LP = Long Play (4 hours on a T-120).
Luminance	Brightness part of a video signal. See brightness.
MACRO	Camera feature that allows shooting objects close-up to fill up the screen. This allows user to get within 3/8" of a small object and have it in focus and filling the entire screen.
Manual Focus	Camcorder feature to be used when auto-focus is not appropriate. The camera operator adjusts the lens by pressing a button. Manual focus should be used for objects more than 30 feet from the camera, when the focus point is not in the center of the picture or when close and distant objects are both near the center of the viewfinder.
Matching Transformer	In-line transformer which, in television applications, converts 75-ohm antenna/cable signals to 300-ohm signals or vice versa.
Mechanical Tuner	Tuner that offers good basic operation for low-end products.
Memory	The part of a digital system that stores information for quick recall.
Mode Selector	Camcorder feature that lets you choose to play a recording or to record.
Modulation	Process of loading separate base-band audio and video signals onto an RF signal or carrier.
Module	The part of the decoder system in a satellite receiver that actually does the decoding.
Monitor	See TV Monitor.
MOS Imager	Another form of Imaging Device. See CCD Imager.
MOS Pick-up	Camcorder device that eliminates the lag or burn-in caused by photographing a bright object or light.

MovieCorder

Radio Shack product name for a generic product called a camcorder. This is a combination video camera and video recorder packaged in one compact unit.

MTS Decoder

Section of a tuner that separates the 2 or 3 channels or audio transmitted when MTS (Multi Channel Television Sound) is broadcast. The audio signal is separated into left channel stereo, right channel stereo, and optional SAP (Special Audio Program) channels.

Multi-channel Television Sound (MTS)

Name for television broadcast/receiving system that contains a left and right stereo channel plus a third (optional) audio channel for special audio programs (SAP). The MTS feature allows users to receive and/or record stereo broadcasts plus whatever is transmitted on the SAP audio channel.

Multiple RF Inputs

Feature that allows users to permanently connect both their antenna wire and cable wire to their TV and choose the signal source they wish with a switch or remote control. Often eliminates the need for a separate A/B switch.

Multiplexing

Placement of two different signals in the same location. In Hi-Fi VCRs, the process used to store audio information on the same portion of the tape used to store video information.

Multiple Video Distribution System (MVDS)

This device makes it easy to send signals from the satellite receiver and up to three other video sources to all TVs located throughout the customer's house.

Noise Bars

Lines of static or picture distortion and break-up that appear on the screen during the visual search or freeze-frame modes of VCR operation.

Noise Reduction in the Brightness Signal

In HQ, either a circuit that removes video noise or graininess from the brightness part of the signal or one that removes noise from the color part of the signal. (Neither are required in HQ units.)

Noise Reduction in the Color Signal — In HQ, either a circuit that removes video noise or graininess from the brightness part of the signal or one that removes noise from the color part of the signal. (Neither are required in HQ units.)

On-Screen Display (OSD) — Feature that displays TV or VCR data, instructions, or timer settings on the TV screen. Simplifies and removes confusion from timer programming.

Pause — A VCR feature making it possible to temporarily stop the movement of the tape.

Phase-Locked Loop (PLL) — A method of electronic tuning used in TVs and radios that seeks out a selected frequency and locks into it. See Digital PLL Tuner.

Picture-in-Picture — TV feature that allows you to watch two channels at the same time.

Picture Tube — Tube that receives electrical impulses and translates them into a picture on its front surface or screen. See CRT.

Pixels — Tiny dots that make up a liquid crystal display. Each dot has the ability to appear black, white, or anywhere in between.

Play — Tape movement in a forward direction.

Power Focus — Camcorder feature that lets you operate the focus manually. It can be used for everything from very close focusing to infinity.

Power-On Switch — Camcorder device that turns the power on so you can operate the camera.

Power Zoom Lens — Motorized lens control that allows the used to go from a wide-angle shot to a telephoto shot. This allows the user to go from one type of shot to another smoothly with the push of a button.

Program Packaging/ Bundling

Satellite system service that includes a decoder module with programming. Several sports services, news services, and premium programmers may be bundled together with the decoder module offered at one low price.

Projection TV

Large-screen televisions where the increased picture size is obtained by projecting the image onto a blank screen similar to a movie screen.

Quick-Response Tape System

VCR feature that cuts the amount of time between the time you press PLAY and the time the picture shows up on the TV screen. When you load a cassette tape into a quick-response system VCR, the machine pulls the tape out of the cassette and moves it partly through the transport. No physical contact is made with the video drum. When you press PLAY, there is less room for the tape to travel, thus, shortening the amount of time needed for the picture to appear on the screen.

Quick-Timer Recording (QTR)

VCR feature that allows users to bypass more complicated timer programming steps and instantly start recording a program in which the timer will still be used to turn off the unit when the program is over. (May also allow setting of a delayed start-time within the next 24 hours.) Especially useful for recording a program in progress, if user leaves before the end of the program. (Also called easy timer recording.)

Radio Frequency (RF)

In television, the general name for signals used to transmit all broadcast and cable TV. Video and audio portions of the signal are transmitted and travel <u>together</u> on the same radio frequency signal.

RCA-Type Connectors

Push-on/pull-off type plugs and jacks commonly used for connecting speaker/audio wires and base band video cables. The RCA design of the male plug incorporates one isolated center prong for the (+) contact and use of the outer jack housing for the (-) contact--also known as phonojacks and plugs.

Receiver	A satellite receiver converts these satellite frequencies to ones that are usable by the Television.
Record/Pause	VCR feature that is used to edit out unwanted material as a recording is made.
Remote-Control Cable Converter	Cable-only tuner designed as a separate unit. Allows users to select cable channels using the unit's remote control and send the signal to the TV set on either channel 3 or 4 or base-band connections.
Repeat Mode	Video Disc Player feature that lets you automatically repeat a specified section of a disc, the chapter or track currently playing, a series of chapters or tracks you program, or an entire side of a disc.
Resolution	The accuracy of detail in reproducing a television picture. A function of the number of horizontal scan lines. See High Resolution.
Review	Camcorder feature that lets you see an instant replay of what you just recorded. It lets you review the last few seconds of a recording to check if the camera settings were correct.
Rewind	A change in the direction of a VCR tape in the reverse direction.
RF Converter/ Modulator	Optional accessory that allows camcorder to play back on TVs with only VHF/UHF antenna terminals. Converts line-level signals from camcorder to VHF signal (Channel 3 or 4).
Satellite	An electronic communications system that orbits the earth. It consists of antennas, receivers, and transmitters that relay communications signals from earth transmitters to earth receivers.

Scanning Memory — Tuner feature that allows user to scan or sequence through pre-selected channels while bypassing undesired channels. The memory eliminates the need to scan through unused/undesired channels.

Scrambling — Distortion or mixing-up of a portion of a video signal by a cable company (or satellite programmer) so customers require a special cable company box in order to receive and use the signal.

Self-timer — Camera feature that delays the start of recording for 10 seconds. This allows the user to get into the picture before the recording begins.

Sharpness — The amount of detail present in a television picture.

Sharpness Control — Control/circuit found on high-end televisions that is actually an adjustable detail-enhancer.

Shielded Video Cable — Cable designed so the (-) or (ground) conductor (usually a braided wire "sleeve") completely encloses the positive (+) conductor and prevents (or shields) the (+) conductor from picking up nearby interfering signals.

Signal-to-Noise Ratio — Refers to how much louder the signal is than the residual noise level. A higher signal-to-noise means little or no perceivable background noise.

Signal Splitter — Device that splits or separates signals from a common input into separate multiple outputs (i.e. 1 input split into 2 or more identical outputs; 1-75 ohm input split into 3-300 ohm outputs for VHF, UHF, FM; etc.) Some splitters can be used in reverse (if appropriate) and will then operate as a combiner.

Simple Backspace Edit

A VCR feature that is used to edit out unwanted material as a recording is being made. When PAUSE is pressed during recording, the VCR backsup the tape a little and stops. This procedure is called a simple backspace edit. When PAUSE is pressed again to resume recording, the next frame begins exactly where it should--in sync with the previous frame. Without this feature, there would be a jerk or "glitch" at the edit point. With it, the edit point is usually smooth and is hardly noticed.

Simul

Position in a three-way switch on high-end VCRs that allows you to receive the picture from the antenna/cable source and the sound from a separate audio source. See A/V or EXT Position.

Simulcast

Method where a program is broadcast using two different mediums simultaneously. (Ex. Concert where video/audio are broadcast as a television signal and matching stereo audio is broadcast at the same time as an FM signal.)

Slow Motion

See Freeze Frame.

SP

Abbreviation for VHS recording speed on a VCR.
SP = Standard Play (2 hours on a T-120).

Special Audio Program (SAP)

Third channel of audio that may be broadcast/received along with the left/right stereo channels when MTS is used. May contain second-language audio or whatever audio program the broadcaster wishes to transmit.

Square Picture Tube

Style of picture tube in which the corners are square. Provides a decrease in distortion at the corners of the screen and a larger diagonal measurement for a tube of comparable viewing area.

Stereo Hi-Fi VCR

A VCR with hi-fi stereo is able to record and playback audio information using Hi-Fi technology. You hear the stereo effect when the VCR is connected properly to a stereo TV or stereo system amplifier.

Stereo VCR

A stereo VCR is capable of recording and playing back stereo sound only on the linear audio track. You hear the stereo effect when the VCR is connected properly to a stereo TV or stereo system amplifier.

Stop

VCR feature that stops the tape movement in any mode.

SuperImposer

Camcorder feature that can be used to shoot writing or type off a piece of paper and add it to your video picture.

Tele-MACRO Focus

Camcorder feature that lets you use maximum telephoto magnification at distances as close as 2 feet. This feature is great for taking portrait pictures of family members at social gatherings.

Television (TV)

Television set. TV types discussed in this manual are:

LCD TV - television set that uses an LCD, Liquid Crystal Display, to reproduce the picture, instead of a CRT.

Projection TV - large screen televisions where the increased picture size is obtained by projecting the image onto a black screen similar to a movie screen.

TV Monitor - television set that does not have an internal tuner and only has inputs for separate base-band (audio and video) signals. Technical definition = video only unit that does not have audio circuits.

TV Monitor/Receiver - television set with both an internal tuner capable of selecting VHF and/or UHF channels and separate inputs for base-band (audio and video) signals.

TV Receiver - television set with an internal tuner capable of selecting VHF and/or UHF channels.

Tight Shot

Camcorder feature that lets you get close to your subject or the action.

Time-Lapse Recording — Lets you program the camcorder to make a series of 1-second recordings that occur 30 seconds, 1 minute, 2 minutes, or 5 minutes apart. When played back, this has the effect of compressing time, or time lapse.

Tint — Control/circuit to adjust the balance between the three basic colors (red, green, blue) in a TV picture. Also called Hue. See Hue.

Tinted CRT — A high-contrast screen in a high-resolution picture tube that uses a dark or tinted CRT to improve picture contrast, particularly in a brightly lit room.

Titler — Camcorder feature that lets you put a title screen or credits on your videos.

Title Graphics Grabber — See SuperImposer.

Track/Chapter Random Programming — A Video Disc Player feature that lets you program up to 20 chapters or tracks to play in any order you choose.

Tracking Control — VCR control that allows for adjustment of the alignment between the tape and the video heads. Eliminates or reduces snow or interference at the top/bottom of the picture caused when a tape travels past the heads in a different position that it traveled when recorded.

Trap — Cable company method used to prevent subscribers from receiving a channel they are not paying for. The trap is an electronic device inserted in the cable wire circuit, usually just before it enters the subscriber's house, which prevents a particular channel from traveling any further.

"T" Telephoto — See Tight Shot.

Tuner — Device or component in a TV/VCR used to select a channel.

Tuner Band Switch — A television switch that lets you set the tuner to receive regular VHF/UHF channels or cable TV channels.

Tuner-in-a-Tuner — See Picture-in-a-Picture.

Tuner Memory Programming — VCR feature that automatically stores all the active channels in your television viewing area into memory. With the touch of one button you can access these stored channels.

TV — An electronic system for encoding a specific scene at a given location, transmitting the encoded signals, and receiving, decoding, and reproducing the scene at a remote location.

TV Monitor — Television set that does not have an internal tuner and only has inputs for separate base-band (audio and video) signals. (Technical definition = video-only unit that does not have audio circuits).

TV Monitor/Receiver — Television set with both an internal tuner capable of selecting VHF and/or UHF channels and separate inputs for base-band (audio and video) signals.

TV Receiver — Television set with both an internal tuner (capable of selecting VHF and/or UHF channels) and separate inputs for base band (audio and video) signals.

TV/VCR Button — A button that controls which signal gets to the VCR output. When the button is set to the TV position, all the antenna/cable signals go directly to the VCR output and from there to the TV connected to the VCR. When the button is set to the VCR position, only the single channel selected by the VCR tuner is sent to the VCR output. Then the connected TV can receive only that channel.

TV/VCP Combo-Player — This machine combines a TV and a Video Cassette Player in a single portable system.

2-Head VCR — The standard number of video heads is 2. Because the individual pictures or "frames" of the video signal are recorded in two halves, each of the video heads records or plays back one half. Two video heads are capable of recording and playing back the complete video signals.

UHF

Ultra High Frequency. Broadcast TV channels 14 through 83. The FCC now only licenses channels 14-69. UHF often identifies components (antennas, tuners, terminals, etc.) whose major function is connected to broadcasting/ receiving UHF TV channels.

Varactor Tuner

A type of television tuner that has numerous channel selection buttons with each containing its own tuning wheels and band selector. See Voltage Synthesized Tuner.

Variable Speed Shutter

Camera shutter that allows the operator to adjust the length of time the shutter is open or closed. Camcorder feature that reduces blurring that might occur when using freeze frame or slow motion. This gives the user a clear picture when they are using this feature for something like analyzing their golf swing.

VC II/VC II Plus

VC II or VC II Plus is a system used to scramble or unscramble satellite channels.

VCR

Video Cassette Recorder. A machine that can record a videocassette and play it back.

Vertical Hold

Control/circuit that stabilizes and maintains the vertical lines which make up a TV picture. Proper adjustment of this control prevents the picture from "rolling" or "flipping."

VHF

Very High Frequency. Broadcast TV channels 2 through 13 and all cable channels use frequencies in this range.

VHS

Video Home System. Most popular format for home video cassette recorders. Method of recording video signals on 1/2" wide tape in a diagonal stripe pattern using helical scan. VHS cassettes are the largest 1/2" cassettes and record up to 8 hours. VHS Tape will last 15-30 years without playback problems.

VHS-C

Video Home System Compact. Popular format for home videocassette recorders. Uses half-inch tape.

Video

Base-Band picture signals.

Video Disc Player — Compact-disc quality in a video player. This combined machine offers razor sharp, color-rich, high-density pictures, plus sensational digital sound.

Video Dub — Lets you edit/change the recorded video image by replacing an existing video image with a new one.

Video Editing — Camcorder feature also known as insert editing which lets you change pictures for cutaways or close-ups, without changing the sound on the original tape.

Video Playback — There are three methods of playing back your videotape. You can take the tape out of the camcorder and load it into a VCR for playback; you can playback through a TV or Monitor from the camera itself; or you can get instant video playback through the viewfinder and listen to the audio with an optional earphone or headset with an 1/8" plug.

Video Signals — VHF, UHF or cable signals.

Viewfinder Adjustment Control — Camcorder device that lets you adjust the Viewfinder so you can see exactly what the camcorder sees. This makes your pictures look professional, allowing less room for error in missed shots, shots not in full-view, or shots out of focus.

Visual Search — VCR feature that allows viewing the tape at a fast speed in the forward or reverse direction. This feature allows the user to quickly find the spot they want to see in playback.

VHS Index Search System (VISS) — See Index Recording.

Voltage-Synthesized Tuner — Type of varactor tuner that does not use tuning wheels and utilizes up/down tuning buttons to select channels which are stored in electronic "memory" positions.

White-Level Clipping

Removal (or non-use) of the top portion of a brightness signal because it contains noise and distortion. In HQ (which requires increased white-level clipping) it is the ability of a VCR to record (and playback) a greater portion of the brightness signal because the point on the signal where the noise and distortion occurs (clipping point) is higher. The result is sharper edges on picture elements (letters especially. A required feature in a unit advertised as HQ.)

'W' Wide Angle

Camcorder feature that lets you zoom out for wide angle shots. This lets you get close to your subject.

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VIDEO CERTIFICATION EXAMINATION

Directions: To complete this examination you must have a Video Certification Scantron Form and a Number Two Pencil. Obtain these from your store manager. Complete the header information. Please PRINT all information on this form. Select the best answer by filling in the correct answer choice. If you need to change an answer, completely erase your incorrect answer and fill in the correct answer. Make sure that there are no unnecessary marks on this form. There are 120 questions on this Video Certification Examination. Each question is worth 1 point. A perfect score is 120, and passing is 108 or better.

1. Which type of coaxial cable is preferred for cable video signals?

   a. RG 6
   b. RG 8
   c. RG 58
   d. RG 59

2. An 8-1 zoom ratio lets you get within 1/8" of your subject.

   a. True
   b. False

3. If a VCR has stereo sound, it is capable of recording and playing back stereo sound only on the linear audio track.

   a. True
   b. False

4. Name the device that allows manual selection of the VCR input from either the antenna terminals or the A/V jacks.

   a. HRC/IRC Switch
   b. Input Select Switch
   c. Tuner/Simul Switch

5. To get the full benefit from Dolby-encoded videotapes, you need a stereo VCR.

   a. True
   b. False

6. When you use a camcorder in a low light level, the picture will be grainy and have color shifting. How can you eliminate these conditions?

   a. Buy a camera with a lower lux.
   b. Increase the light in the scene.
   c. Switch to high-grade tape.
   d. Buy a camera with a higher lux.

7. The high-speed shutter on a camcorder improves the picture when using a standard grade videotape.

   a. True
   b. False

8. A flying erase head will eliminate visual noise between adjourning scenes.

   a. True
   b. False

9. Name the device that converts 75-ohm antenna/cable signals to 300-ohm signals, or vice versa.

   a. Band Splitter
   b. Impedance Converter
   c. Matching Transformer
   d. 75/300-ohm signals

10. A Receiver/Monitor includes only antenna/cable inputs.

    a. True
    b. False

11. What type of VCR allows your customer to take full advantage of a camcorder's high-speed shutter, by providing superb slow motion and freeze-frame effects?

    a. All VCRs on the market
    b. Helical Scanning VCR
    c. All 2-head VCRs
    d. All 4-head VCRs

12. Which is a better lux rating for a camcorder?

    a. 2 lux
    b. 3 lux
    c. 4 lux
    d. 5 lux

13. In addition to matching the impedance of the TV or VCR, these devices also divide the signals from an antenna into VHF and UHF signals. Name these devices.

    a. Band Splitter
    b. Matching Transformer
    c. Coupler

14. Name the signal which contains special information which is added to the regular broadcast audio signal.

    a. Digital
    b. Hi-Fi
    c. MTS
    d. SAP

15. VCRs that have more than two heads use the extra heads to improve the recording/playback quality at the EP speed.

    a. True
    b. False

16. Name the TV broadcast/receiving system that contains a left and right stereo channel plus a third (optional) audio channel for special audio programs.

    a. HRC
    b. Hi-Fi
    c. MTS
    d. SAP

17. In a four-head VCR that is designed for special effects, one pair of video heads is adjusted to a compromised record/playback setting. The other two heads are adjusted to read the video signals when the tape is stopped, and during freeze-frame. The clearest special effects would be obtained at what speed?

    a. 2-hour SP speed
    b. 4-hour LP speed
    c. 6-hour EP speed

18. Name the camera feature that allows shooting objects close-up, within 3/8" of a small object.

    a. Auto Focus
    b. MACRO
    c. Power Zoom
    d. Telephoto Zoom

19. A customer who does nothing but watch rental tapes and who cares nothing about special effects would probably be happy with:

    a. A standard 2-head VCR
    b. A 2-head VCR with Hi-Fi Stereo Sound
    c. A 4-head VCR with Hi-Fi Stereo Sound
    d. A 4-head Double-Azimuth VCR

20. What is the general name used for all signals for broadcast and cable TV?

a. Base Band
b. Carrier
c. Modulation
d. Radio Frequency

21. Some companies include the Hi-Fi audio heads, which are mounted in the head drum with their video heads, in their advertised number of heads. The customer believes they are investing in a 4-head machine and will not be able to:

a. use this VCR to record movies.
b. use this VCR to record lots of programs off-the-air and save money by using the 6-hour EP speed.
c. use this VCR for freeze-frame study of their golf or tennis swing.

22. The impedance of the cable does not have to match the impedance of the unit it is connected to.

a. True
b. False

23. Which tuner does not allow access to over 100 channels?

a. Digital PLL
b. Mechanical
c. Varactor
d. Voltage-Synthesized

24. "Scrambling" is used to mix up a crucial part of the signal so that a TV or VCR can't turn the signal into picture and sound.

a. True
b. False

25. Name the feature that makes it easier for your customers to program their VCR to record a show that will air later in the week.

a. AFT
b. QTR
c. OSD
d. Tuner Memory Programming

26. TV picture tubes are not designed to use digital signals and must be converted back to analog signals before they are sent to the picture tube.

a. True
b. False

27. Name the camcorder feature that, when PAUSE is pressed during recording, stops the picture break-up between scenes.

a. Freeze Frame
b. Record/Pause
c. Simple Backspace Edit

28. A tracking adjustment is usually necessary when playing back tapes that were recorded on the same VCR.

a. True
b. False

29. Name the device that converts light coming through the camcorder's lens into electrical signals. Its solid state technology helps make camcorders smaller and lighter. It eliminates lag or burn-in caused by photographing a bright light.

a. Backlight/Gain-up
b. CCD Imager
c. Iris
d. Variable-Speed Shutter

30. Name the device that removes video noise from the signal, making the picture sharper in most high-end TVs.

a. Comb Filter
b. Demodulation
c. Noise Reduction

31. If your customer wants to attach a TV antenna that has an impedance of 300-ohms to an older type TV with 300-ohm screw terminals for antenna connections, the best solution should be to:

a. use a flat-lead cable
b. use a Matching Transformer
c. use Matching Transformers and 75-ohm coaxial cable
d. use a signal splitter

32. Video tape that has been recorded by a MovieCorder can be expected to hold the picture information for:

a. 5 years
b. 10 years
c. 12 years
d. 30 years

33. Name the camcorder feature that can be used to do time-motion studies.

a. Freeze-Frame
b. Index Recording
c. Interval Recording
d. Review

34. A VCR's video head drum is mounted...

a. At an angle
b. Horizontally
c. Vertically

35. Name the feature that eliminates or reduces snow or interference at the top/bottom of the TV picture. This interference occurs when a tape travels past the heads in a different position than it traveled when it was recorded.

a. A/B Switch
b. Signal Splitter
c. Tracking Control

36. Name the brightness part of the video signal.

a. Brightness
b. Chrominance
c. Luminance
d. Whiteness

37. Name the measure of apparent resistance in an AC circuit that is the same as the actual resistance in a similar DC circuit.

a. Impedance
b. Intensity
c. Modulation
d. Ohms

38. All of the following are part of HQ except:

a. noise reduction in the audio signal.
b. noise reduction in the brightness signal.
c. noise reduction in the color signal.
d. increased white-level clipping.

39. Because MovieCorders are Video Cameras, still camera filters and lens extenders will not work.

a. True
b. False

40. Name the electronic circuit in a TV set that automatically adjusts tuners with temperature-sensitive components for optimum reception of a transmitting frequency under varying conditions.

a. Automatic Fine-Tuning
b. Detail Enhancement
c. Digital PLL
d. Impedance

41. High-resolution picture tubes display more than:

a. 200 horizontal lines
b. 250 horizontal lines
c. 300 horizontal lines

42. VCRs have several different types of heads: an erase head; a regular audio head; video heads; and hi-fi audio heads. Which heads are your customers most interested in?

a. Erase Head
b. Hi-Fi Audio Heads
c. Regular Audio Head
d. Video Heads

43. Noise Reduction is seldom needed for the audio from a Hi-Fi VCR because the signal-to-noise ratio is so good.

a. True
b. False

44. Helical scan refers to the method of recording video signals on a tape through:

a. Vertical Recording
b. Ordinary Recording
c. Horizontal Recording
d. Angled Recording

45. The advantages of investing in a LCD TV include all of the following except:

a. the LCD screen is a flat, wafer-like unit, which makes it possible for LCD TVs to be more compact than small TVs with a standard picture tube.
b. the picture on an LCD screen is not "washed out" by strong sunlight. In fact, the picture gets better in strong light.
c. the screen is designed so that existing light sources, the sun or normal room lights, can be used to light the picture.
d. the picture scan rate is less than 30 times per second which enhances the picture quality.

46. A Monitor has the capacity to directly receive radio-frequency signals.

a. True
b. False

47. Name the camcorder feature that allows you to shoot writing or type off a piece of paper and add it to your video picture.

a. Character Generator
b. SuperImposer
c. Titler

48. A high-contrast screen uses:

a. more than 300 lines of horizontal resolution.
b. more than 525 lines of vertical resolution.
c. a dark or "tinted" CRT to improve picture contrast, particularly in a brightly lit room.

49. Most TVs use a picture tube that is technically called a "Cathode Ray Tube" or CRT. In this type of picture tube, an electronic beam controlled by electro-magnets draws the picture on the front surface of the tube...

a. 20 times per second
b. 30 times per second
c. 45 times per second
d. 60 times per second

50. The tint control on a TV...

a. adjusts the overall amount of color in the picture by increasing or decreasing all three colors equally.
b. adjusts the balance among the three colors so that they are mixed in the proper amounts to reproduce the picture accurately.
c. makes the entire picture either darker or lighter.
d. increases or decreases the difference in brightness between the dark and the light areas of the picture.

51. The display of thousands of tiny dots in a LCD TV is called?

a. Cathode Ray Tube
b. Liquid Crystal Display
c. Modules
d. Pixels

52. Reception of MTS and SAP signals requires a tuner with a MTS decoder. The decoder can be included in any type of tuner, but because MTS is considered a high-end feature, it is usually found in Varactor Tuners.

a. True
b. False

53. What is the number of actual vertical lines that are used to make up a TV picture?

a. 450
b. 475
c. 500
d. 525

54. Audio/Video Dubbing lets you add comments or music to supplement your recordings.

a. True
b. False

55. Radio Shack's high-end VCRs have a 3-way Input Select Switch instead of a 2-way Input Select Switch for all the of the following uses except:

a. A/V or EXT position for separate audio/video signals.
b. Position for cable signals.
c. SIMUL position which allows you to receive the picture from the antenna/cable service and the sound from a separate audio source.
d. Tuner position for antenna signals.

56. The common characteristics of all RF video signals is that the picture and sound portions travel only through a cable wire.

a. True
b. False

57. In a Quick-Response Tape System, the amount of time between when you press PLAY and the time the picture shows up on the TV screen is shortened.

a. True
b. False

58. CLV discs offer flawless still frames and multi-speed features.

a. True
b. False

59. In a Projection TV, the screen is not producing the picture. The picture is being projected onto a blank screen similar to those used for movie films.

a. True
b. False

60. A cable system selector lets you set the tuner to receive one of three types of cable system channels, either STD, HRC or IRC.

a. True
b. False

61. You should use the Manual Focus setting on a camcorder for all the following except:

a. when the focus point is behind a window.
b. when the focus point or object is not in the center of the picture.
c. when you are focusing on a subject over 30 feet away.
d. when you are focusing on a subject within 30 feet.

62. Name the type of receiver that has a decoder built into it.

a. BMAC
b. D-Code
c. IRD
d. VC II

63. Focus Reverse, an 8mm MovieCorder feature, allows the focus to remain fixed during a pan, producing a smooth picture as you move from subject to subject.

a. True
b. False

64. VHF, UHF, Cable TV signals and the separate audio and video signals are all part of the larger category of signals called Digital.

a. True
b. False

65. Name the feature that prevents accidental recording of your videotape.

a. Antenna/Cable Pass Through
b. Erase Protection
c. Tracking Control
d. Visual Search

66. Base-Band Signals do not require shielded video cable.

a. True
b. False

67. HDTV uses additional scan lines which make the picture clearer and more vivid.

a. True
b. False

68. MovieCorders that have 270,000 pixels on their Imaging Device create a clear, high-resolution picture, even in low-light conditions.

a. True
b. False

69. Which device is referred to as the active antenna in a satellite system?

a. the Dish
b. the Feedhorn
c. the LNB
d. the Receiver

70. "Simulcast" is a technique in which a cable company loads regular audio and video onto the cable signal. Then the stereo audio is loaded onto an FM Stereo radio signal, and both signals are sent through the same cable wire to the subscriber's house.

a. True
b. False

71. Name the process used to store audio information on the same part of the tape as the video signal.

a. Detail Enhancement
b. Helical Scanning
c. HQ
d. Multiplexing

72. Name the camcorder feature that offers recordings with hi-fi monaural sound producing a better frequency response and a better sound.

a. AFM
b. Audio Dubbing
c. VISS

73. Name the Video Disc Player's feature that automatically selects the tracks on a CD that will fit on a specified length of audiotape.

a. Automatic Random Play
b. CD Edit
c. Repeat Mode
d. Track/Chapter Random Programming

74. The greater number of horizontal lines, the sharper the TV picture.

a. True
b. False

75. For best results in setting the camcorder for zoom shots, zoom in as close as possible to your subject, then focus manually.

a. True
b. False

76. The "Module" actually does the decoding in a DeScrambler system.

a. True
b. False

77. The azimuth angle is set at the SP speed in a 2-head VCR.

a. True
b. False

78. Name the camcorder feature that lets you analyze fast action when played back at a slow speed.

a. Fast-Scan Review
b. Freeze-Frame
c. Slow Motion
d. Variable Speed Shutter

79. Which is the best LNB temperature rating for a satellite system?

a. 40 degrees
b. 45 degrees
c. 50 degrees
d. 55 degrees

80. If you record a tape on a stereo Hi-Fi VCR and then loan the tape to a friend who has a regular stereo VCR, their VCR will only play the regular track in mono.

a. True
b. False

81. Name the camcorder feature that provides professional scene transitions.

a. Auto Focus
b. Fade In/Fade Out
c. Iris
d. Variable Speed Shutter

82. The feedhorn determines the polarity of a signal in a satellite system.

a. True
b. False

83. Most camcorders record on the linear audio track, which produces noisy, limited frequency response sound.

a. True
b. False

84. The only advantage of investing in a 4-Head VCR is picture quality. You get a better picture at SP and EP than you would get in a 2-Head VCR.

a. True
b. False

85. Name the feature that lets you automatically locate the end of a recorded section of a partially recorded tape.

a. Blank Search
b. Index Search/Scan
c. Visual Search

86. For best results when using the Variable-Speed Shutter feature, your customer should use a 4-Head Special-Effects VCR or a 4-Head Double-Azimuth VCR.

a. True
b. False

87. C-Band Signals are more powerful than Ku Band Signals.

a. True
b. False

88. Digital signals allow a single picture to be stored in memory for a perfect freeze-frame effect.

a. True
b. False

89. Name the device that enables you to send signals from the satellite receiver to all TVs in your home.

a. DBS
b. LNB
c. IRC
d. MVDS

90. Name the VCR feature that automatically marks the tape with a signal when you start recording. This enables you to quickly locate a specific recording on the tape.

a. Blank Search
b. Index Search/Scan
c. Visual Search

91. VC II Plus Decoder Modules can be shipped inside the satellite receiver anyplace in the world without problems.

a. True
b. False

92. Program Bundling is the process of selling cable services along with the decoder module to satellite customers.

a. True
b. False

93. You need more light than normal when you use the high-shutter speed feature.

a. True
b. False

94. Name the camcorder feature that lets you adjust for unusual lighting conditions.

a. Auto White-Balance
b. Backlight/Gain-up
c. Viewfinder Adjustment Control
d. Lens Control

Matching: Choose the best answer.

95.	Allows setting of a start-time within a 24-hour period	a.	Antenna/Cable Pass Through
96.	One-button recording.	b.	Automatic Timer Recording
97.	Lets you watch one program while you record another.	c.	Delayed QTR
		d.	QTR

Matching: Choose the best answer.

98.	Lets you select up to 82 VHF and UHF channels or up to 41 different cable channels.	a.	111-channel cable-compatible tuner
99.	Lets you select up to 68 VHF and UHF channels and up to 111 cable channels.	b.	122-channel cable-compatible tuner
100.	Lets you select up to 82 VHF and UHF channels and up to 40 cable channels.	c.	179-channel cable-compatible tuner

Matching: Choose the best answer

101.	The name for VHF and UHF antenna signals and cable signals.	a.	Carrier
102.	The name for the process when picture and sound are loaded into the RF signal for a particular channel.	b.	De-Modulation
103.	The name for the RF signal for a particular channel.	c.	Modulation
		d.	RF

Matching: Choose the best answer.

104.	Standard-Play Video Laser Disc Format	a.	CAV - constant angular velocity
105.	Extended-Play Video Laser Disc Format	b.	CLV - constant linear velocity

Matching: Choose the best answer.

106.	Satellite signals with a maximum output of 12 watts.	a.	C-Band Signals
107.	Satellite signals with medium to high output power of 50 to 150 watts.	b.	DBS
108.	Satellite signals with a maximum output of 20 watts.	c.	Ku Band
		d.	IRD

Matching: Choose the best answer.

109.	Converts frequencies to ones that are usable by a TV.	a.	Dish
110.	Device that catches the signals transmitted from the satellite in orbit.	b.	Feedhorn
111.	Device that amplifies the satellite signal and then converts them into lower frequencies.	c.	LNB
		d.	Receiver

Matching: Choose the best answer.

112.	Outstanding for improving the picture quality.	a.	2-Head VCR
113.	Good picture at the SP speed.	b.	4-Head VCR
114.	Great for special effects.	c.	4-Head Double-Azimuth VCR

Matching: Choose the best answer

115.	The ability to record a greater portion of the brightness signal because the point on the signal where the noise and distortion occurs is higher.	a.	Comb Filter
116.	Circuit that helps sharpen fine lines and the edges of objects.	b.	Detail Enhancement
117.	Noise-reduction circuit that takes video noise out of the color part of the signal.	c.	HQ
		d.	White-Level Clipping

Matching: Choose the best answer

118.	Lets you record a month, day and year code on a videotape.	a.	Review
119.	Lets you get into the picture.	b.	MACRO
120.	Lets you see the last few seconds of a recording to check if the camera settings were correct.	c.	Self-Timer
		d.	Character Generator

NOTES

NOTES

TAKING CARE OF OUR CUSTOMER

The 10 Commandments of Good Business

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1. Customers are the most important people in any business.

2. Customers are not dependent on us--
we are dependent on them.

3. Customers are not an interruption of our work--
they are the purpose of it.

4. Customers do us a favor when they call--
we are not doing a favor by serving them.

5. Customers are a part of our business--
they are not outsiders.

6. Customers are not cold statistics--
they are flesh and blood human beings
with feelings and emotions like our own.

7. Customers are not people to argue with
or match wits with.

8. Customers are people who bring us their wants--
it is our job to fill those wants.

9. Customers are deserving of the most courteous
and attentive treatment we can give them.

10. Customers are the lifeblood of this and every
other business.

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